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APPLICANTS Gary Odom, Tigard, OR; ** CONTINUING DATA ***** THIS APPLN CLAIMS BENEFIT OF 60/286,457 04/26/2001 ** FOREIGN APPLICATIONS ***** IF REQUIRED, FOREIGN FILING LICENSE GRANTED** SMALL ENTITY ** ** 04/08/2002					
Foreign Priority claimed <input type="checkbox"/> yes <input type="checkbox"/> no 35 USC 119 (a-d) conditions <input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> Met after met Allowance Verified and Acknowledged Examiner's Signature _____ Initials _____		STATE OR COUNTRY OR	SHEETS DRAWING 10	TOTAL CLAIMS 23	INDEPENDENT CLAIMS 5
ADDRESS Gary Odom 15505 SW Bulrush Lane Tigard ,OR 97223					
TITLE Computer login multiplicity					
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Utility Patent Application & Fee Transmittal

Inventor: Gary Odom

Title: Computer Login Multiplicity

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Box PATENT APPLICATION
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Transmitted herewith for filing is the patent application of:

Inventor: Gary Odom

For: Computer Login Multiplicity

Enclosed are:

- ☒ 21 pages of specification, including 23 claims and an abstract.
- ☒ 10 sheet(s) of drawings.
- ☒ Declaration.
- ☒ Information Disclosure Statement (PTO-1449) and copies of documents listed thereon.
- ☒ Return Receipt Postcard (MPEP 503).
- ☒ A Request and Certification under 35 U.S.C. § 122(b)(2)(B)(i), requesting that the application not be published.
- ☒ Small entity status is claimed for this application.

CLAIMS AS FILED

For	Claims Filed	Number Free	Number Extra	Rate	Basic Fee \$370.00
Total Claims	23	20	= 3	\$9.00	\$ 27.00
Independent Claims	5	3	= 2	\$42.00	\$ 84.00
Multiple Dependent Claim Fee				\$140.00	
TOTAL FILING FEE					\$481.00

- ☒ A credit card form for the amount of \$481 to cover the filing fee is enclosed.
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Utility Patent Application & Fee Transmittal

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Title: Computer Login Multiplicity
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
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REQUEST AND CERTIFICATION UNDER 35 U.S.C. § 122(b)(2)(B)(i)

Applicant may rescind this nonpublication request at any time. See "Request to Rescind Previous Nonpublication Request". If applicant rescinds a request that an application not be published under 35 U.S.C. § 122(b), the application will be scheduled for publication at eighteen months from the earliest claimed filing date for which a benefit is claimed.

If applicant subsequently files an application directed to the invention disclosed in the attached application in another country, or under a multilateral international agreement, that requires publication of applications eighteen months after filing, applicant must notify the United States Patent and Trademark Office of such filing within forty-five (45) days after the date of the filing of such foreign or international application. Failure to do so will result in abandonment of this application (35 U.S.C. § 122 (b)(2)(B)(iii)).

This request is signed in compliance with 37 CFR § 1.33(b) and is submitted with the application upon filing. I hereby certify that the invention disclosed in the attached application has not and will not be the subject of an application filed in another country, or under a multilateral agreement, that requires publication at eighteen months after filing. I hereby request that the attached application not be published under 35 U.S.C. § 122(b).

Signed: 
Gary Odom

Date: March 4, 2002

COMPUTER LOGIN MULTIPLICITY

TECHNICAL FIELD

The relevant technical field is computer login security.

BACKGROUND

5 Computer login traditionally consists of a user typing in an account name and a password. Historically, access validation (authenticating a password one an account name is known) has been through reading data from a single password file comprising account name and encrypted password. Once a single account and a typed password is known, system security can be compromised. Once encryption for a single password is broken, all other passwords
10 are potentially comprised, as all passwords and account names are conveniently located in the single password file and use the same encryption.

SUMMARY

Computer login may comprise any user-determined submission, including a plurality of transmissions for which submission may be passively terminated. Preferably a user
15 determines the signal types as well as content of signals. This makes submission theft more difficult and less likely.

Account identification may be inferred by signature rather than explicitly stated. Overt account identification provides an entry point for hacking; with inferred account
20 identification, this entry point is eliminated.

A plurality of discontinuous data blocks (keys) in a one or more files may be employed for validation. This ameliorates having a single authentication key that, once accessed, may be
25 deciphered and security compromised.

Multiple trajectories to keys, hence multiple paths to authorization as well as ersatz trajectories and paths when submission will not garner authorized access, obfuscate validation protocol to spy software and devices.

- 5 These aspects are independent: one does not rely upon the other. Any one or all may be employed to enhance computer login security.

Access privileges for accounts are not germane. Determining or setting account access privileges are separate operations that occur after submission validation and authorization.

10 **BRIEF DESCRIPTION OF THE DRAWINGS**

Figure 1 is a block diagram of a computer suitable for practicing the invention.

Figure 2 depicts the access authentication process.

Figure 3 depicts an embodiment of identification and signature comprising submission.

Figure 4 depicts an embodiment of signature solely comprising submission.

- 15 Figure 5 depicts classifying signals by their transmission and signal types.

Figure 6 depicts simple and composite signals.

Figure 7 depicts active submission termination.

Figure 8 depicts passive submission termination.

Figures 9 & 10 depict example submission screens.

- 20 Figure 11 depicts account creation.

Figure 12 depicts a key.

Figure 13 depicts a key unit.

Figure 14 depicts an example of key indexing.

Figure 15 depicts validation after submission termination.

- 25 Figure 16 depicts incremental validation.

Figure 17 depicts the validation process.

Figure 18 depicts an example of validation key trajectory resulting in access.

Figure 19 depicts an example of validation key trajectory resulting in authorization failure.

DETAILED DESCRIPTION

Figure 1 is a block diagram of a desktop computer 100 which comprises a CPU 102; storage 103, which comprises memory 104 and optionally one or more devices with retention medium(s) 105 such as hard disks, diskettes, compact disks, or tape; an optional display device 101; and one or more input devices 106, examples of which include but are not exclusive to: a keyboard 108; one or more pointing devices 107, such as a mouse; or a biometric device 109, such as a fingerprint reader. The mouse is the most popular pointing device 107 for desktop computers 100. In the description below, mention of a mouse is meant to include pointing devices 107 of any type, including, for example, a pen or stylus used in computing devices where a user may “write” upon a screen. The described software may be employed on such a computer 100. As well, the software described may find application in other computer-like devices requiring secured access, including hand-held or embedded devices.

In the following description, software-determined protocol includes exemplary methods or techniques such as algorithms; or non-algorithmic methods or techniques, including, for example, fuzzy logic or neural network pattern matching; or, random or pseudo-random determinations. A random or pseudo-random technique that results in seemingly arbitrary selection, the equivalent of software rolling dice, is referred to as non-deterministic.

In the following description, protocols, algorithm types, data types, and types of data, such as transmission 11, signal 21, packaging 13, sequencing 15, or encryption 14 types or protocols, are identifiable using binary identification codes (type identifiers), by data length, or other data signature, such as a uniquely identifiable bit pattern, or by convention, such as known location (offset) within a data structure.

Figure 2 depicts the access authentication process 97, comprising submission 9, validation 18, and authorization 27. Naturally, an account 109 must be created 10 before any access authentication process 97 may occur.

Submission 9 comprises one or more transmissions 1 intended for authenticating access to a computer 100 or network of computers 100. As depicted in Figure 3, in one embodiment, a submission 9 comprises identification 3 and signature 4. Historically, an account name would be an identification 3, and a password a signature 4. If surety of uniqueness may be assured, in an alternate embodiment, a submission 9 comprises a single signature 4s, as depicted in Figure 4, supplanting separate identification 3 & signature 4a while providing for the dual components of identification 3 and signature 4. With submission 9 solely comprising signature 4s, an account 109 may be identified by the signature 4s data itself, or by having an account identifier 109 embedded within a key 6 that has been accessed during validation 18 of the signature 4s.

A transmission 1 is user input into the computer 100 via one or more input devices 106, whereupon termination of transmission 1 is recognizable, and resulting in at least one signal 2. There may be different types 11 of transmissions 1, examples of which include mouse 107 movements or clicks, keyboard 108 entry, or combinations thereof. Other types 11 of transmissions 1 are possible with different input devices 106, such as, for example, voice transmission 1 if the computer 100 is equipped with a microphone and speakers.

Multiple-device 106 transmission 1m is conceivable. An example of a multiple-device 106 transmission 1 is a combination of mouse 107 movement while one or more keys 108 are pressed, as depicted in Figure 6.

A signal 2 is a set of related software-recognizable data from a single transmission 1. A plurality of signals 2 of different types 21 may emanate from a single transmission 1. For example, typing a word may yield the signals 2 of entered keys 210 and the timing between keystrokes 211. Another example: mouse 107 movement of the cursor may yield signals 2 of locations 214, velocities, duration, and shape pattern(s) (such as script signatures, drawn characters, and so on) 215.

A transmission 1 of composite signals 2C comprising a plurality of simple signals 2S is conceivable. For example, a multiple-device 106 transmission 1m produces a composite signal 2C if matching to signals 2 of both devices 106 is required, as does requiring signal match 5 of multiple signal types 21 from a single-device transmission 1.

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Signal data 22 may be categorized by its transmission type 11 and/or signal type 21, as depicted in Figure 5. For easy identification, each possible transmission type 11 or signal type 21 may be assigned a unique ordinal. Hypothetically, if a multiple-device 106 transmission 1 is identified as a unique transmission type 11, the range of transmission types 11 may extend to the factorial of all possible input devices 106, depending upon the embodiment employed. To avoid unnecessary complication, consider signal type 21 as potentially additive (rather than combinatorial): for example, a key-mouse transmission 1 could be considered as comprising key 108 plus mouse 107 signals 2, rather than some uniquely identifiable key-mouse signal type 21.

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Identification 3 is at least one transmission 1 of an account identifier 109. Historically, identification 3 has been a keyed-in account name 109. Employing the invention, identification 3 comprises at least one signal 2 from at least one transmission 1. A translation table, algorithmic method, or other software-determined protocol, with or without encryption 14, may be employed if identification 3 or signature 4s does not represent the actual account identifier 109.

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A signature 4 is at least one transmission 1 intended as a security precaution to preclude unauthorized access 39. Historically, a single signal 2 of a single transmission 1 has typically been used for a signature 4, namely a password, which is a signature 4 of a single word of text. A pass-phrase is a signature 4 of a plurality of words of text.

A plurality of transmissions 1 or signals 2 may be used for identification 3 or signature 4. In some embodiments, a user may determine the transmission(s) 1, signal(s) 2, transmission

type(s) 11, or signal type(s) 21 that comprise a submission 9. Alternately, transmission 1 or signal 2 determination accords with a software-determined protocol.

Historically, validation 18 has required an absolute signal match 5 to input 22: for example,
 5 no deviance from a character-based password has been permitted. With mouse 107 movements, or other difficult-to-exactly-replicate signals 2, however, some tolerance may be permitted. Signal 22 tolerance should be allowed when appropriate, and may be set by software-determined protocol or user selection. For example, deviance up to 10% from recorded signal match 5 for keystroke timing 211 may be acceptable. Similarly, as another
 10 example, mouse click location may vary within a radius of 10 pixels and still be tolerated. As multiple signals 2 may comprise a submission 9, the need for exactness for any single signal 2 to properly authenticate access 97 is lessened.

Termination of submission 9 may be active or passive. Figures 7 & 8 illustrate. Inputting a
 15 password or pass-phrase, for example, is typically terminated by pressing the 'Enter' key or clicking an equivalent acknowledge button 43 using the mouse 107. As another example, inputting mouse 107 movement may be actively terminated by a mouse 107 click. With active termination 78, a user terminates submission 9 through a prescribed indication 25. With passive termination 77, software terminates submission 9 without overt user action, but
 20 instead when a predetermined condition is met 26. Examples of passive termination 77 include: recording mouse 107 movement or sound for a limited time, or until a certain elapsed time absent further input; until sufficient signal 2 has been input to allow a signal match 5; or until a succeeding transmission 1 of another transmission type 11 or signal type 21 commences, the change of type 11 itself indicative of previous transmission 1
 25 termination. For example, changing from cursor/mouse movement to mouse button clicking may be considered a change in signal type 21, and hence a possible basis for passive termination. Biometric transmission 1 is typically passively terminated 77: software terminates submission 9 when sufficient biometric signals 2 have been recorded.

Termination 23 of identification 3 or signature 4 may occur using any number of protocols: passively 77 by a predetermined or user-selected number of transmissions 1; final transmission 1 by a particular type of action; active termination 78 by a final gesture, such as a key or button press; passive termination 77 by time out of a predetermined duration or sufficiency of data collection. Another example: incremental validation 181 permits passive termination 77 via absence of next key trajectory 7, or, alternately, completed signal matching 5 of all relevant keys 6.

Figures 9 & 10 depict an example account input 99 or post-account 109 creation submission 9 screen 40, employed to input at least a signature 4. (In one embodiment, account identifiers 3 may be assigned.) Text transmission(s) 1 can be input in the text input dialog 41 comprising a text input control 42 and acknowledge button 43. Signature 4 transmission(s) 1 can be input, and input signals 2 recorded. Figure 9 depicts dragging the text input dialog 41 down the screen 40 as a transmission 1 (by pressing the proper mouse 107 button when the cursor is over an appropriate section of dialog 41, thus selecting the dialog 41, then moving the mouse 107 while keeping the button pressed). The dragging action in this example is terminated by a mouse-up (releasing the mouse 107 button).

In one embodiment, a user may determine as part of account creation 99 which signal types 21 are to be considered for validation 18 of subsequent submissions 9. This is an editing process that may be construed as part of account input 99. For example, after submission termination 23, having recorded signals 2 for account input 99, as depicted in the example of Figure 10, the user may select, via checkbox controls as shown, which signal types 21 of the transmission 1 depicted in Figure 9 are to be considered for the transmission 1 being recorded. The checkboxes are specific to types of signals 21 appropriate to the type of transmission 11 employed. In the described example, the checkboxes (for signal type 21 selection) appear only for account input 99, not when a user is making an submission 9 after an account 109 has been created, as the prerequisite signals 2 for signature 4 or identification 3 have already been stored.

Figure 9 depicts a button 25 for submission termination 78. A termination button 25 or its equivalent is necessary only with active termination 78. Initial input for account creation 10 may use active termination 78 which is later edited out during a subsequent signal 2 and transmission 1 selection process, resulting in passive termination 77.

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There is an embodiment whereby a user may determine some or all of the transmissions 1 or transmission types 11 comprising account input 99. There is an embodiment whereby a user may determine which signal types 21 of select transmissions 1 comprise account input 99.

Otherwise, software-determined protocol may determine all or some transmissions 1 or
10 signals 2 comprising account input 99.

In one embodiment, account input 99 captures all transmission 1 signals 2 until actively terminated 78. In an alternate embodiment, account input 99 may be passively terminated 77. In one embodiment, transmissions 1 and signals 2 from account input 99 may be edited,
15 the user selecting signals 2 and termination, such that only select, edited signals 2 and termination types are employed as account submission 9. In alternate embodiments, as aspects of account input 99, signals 2 may not be edited or user-selected, or termination 23 type user-determined.

20 Figure 11 depicts account creation 10, in the beginning of which account input 99 provides one or more signals 2 from one or more transmissions 1 for packaging into one or more keys 6. Each user account 109 has at least one key 6 for access authentication 97.

There are two aspects to account creation 10: packaging 13, and key 6 creation or
25 employment 16.

Packaging 13 tells how to interpret keys 6, including stored match signals 5. Overt packaging 13 is optional, and may vary by embodiment. Packaging 13 may be implicit by software-determined protocol, obviating the need for overt, data-based packaging 13. There
30 may be two optional aspects to packaging 13: encryption 14 and signal sequencing 15.

Encryption 14 refers to encrypting or decrypting all or part of key 6 data. Encryption 14 is optional, but recommended. Encryption 14 employment may vary by embodiment. In one embodiment, the same encryption 14 protocol or algorithm is used throughout (thus, 5 predetermined). In alternative embodiments, encryption 14 may vary by software-determined protocol or by user selection on a per-user or per-signal 2 basis. If a plurality of protocols are used for encryption 14, the protocol 14 employed must be identifiable.

As a suggestion for encryption 14, initial input signals 2 in the first transmission 1 may 10 comprise a parametric seed for encrypting one or more keys 6. Caution is advised if non-exact signal matching 5 is tolerated, as close may not good be enough for decryption using such a seed technique, but it is possible to incorporate tolerance into an encryption 14 algorithm, so that an acceptable margin of error for signal matching 5 may also suffice for decryption as well. Mathematical rounding is a suggested technique allowing such tolerance; 15 as well employing a subset of possible signals 2, such as a high and low, or using one or more algorithmically-derived values, such as median or mean.

Signal sequencing 15 is codification of the order of signals 2. Signal sequencing 15 may be predetermined (software-determined), such as, for example, input order, or, alternately, a 20 predetermined prioritization. In alternative embodiments, signal sequencing 15 may vary by software-determined protocol or by user selection. If a plurality of protocols are used for signal sequencing 15, the protocol employed must be identifiable.

Sequencing 15 and encryption 14 may be combined, offering further opportunity for 25 obscuring decipherment of packaging 13 protocols.

During account creation 10, each selected signal 2 is optionally encrypted 14, encoded for subsequent signal matching 5, and stored in keys 6, which are stored in key files 8, for 30 subsequent access authentications 97.

As in the prior art, each account 109 must be unique. For accounts 109 where submission 9 comprises identification 3 and signature 4A, identification 3 must be unique. For accounts where submission 9 comprises signature 4s, the signature 4s itself must be unique. During account creation 10, this can be verified by attempting to validate 18 the appropriate
 5 component of a submission 9 for a new account 109 prior to establishing the account 10.

A key 6 may contain account 109 identification 3.

As depicted in Figure 11, a key unit 16 is a virtual or actual collection of signal matches 5.
 10 As in one embodiment a single key 6 may have a plurality of signal matches 5, and thereby function as a plurality of keys 5 in alternate embodiments, a key 6 may comprise a key unit 16. A key file 8 as an actual or potential collection of keys 6 a key unit 8. An established account 109 may be considered a virtual aggregation of the keys 6 used to validate 18 submission 9 for that account 109, hence also represents a key unit 16.

15 A key file 8 comprises at least one key 6. A key file 8 may comprise a plurality of keys 6, or what deceptively may be keys 6: a key file 8 may have pseudo-keys as key file 8 filler. In one embodiment, key files 8 may be a uniform number of bytes, regardless of the number of keys 6 stored in a key file 8. Keys 6 may be in files 8 not exclusively comprising keys 6 (or
 20 pseudo-keys); in other words, a key file 8 may as well be employed for other purposes, including files 8 comprising unrelated data or even executable code.

As depicted in Figure 12, a key 6 may comprise packaging 13, at least one signal match 5 facility, and at least one next key trajectory 7. In alternate embodiments, key 6 composition
 25 varies; the minimum requirement is that a key 6 comprises at least one signal match 5. Packaging 13 and next key trajectory 7 inherency may vary.

A signal match 5 is a signal 2 stored in a key 6 during account creation 10, used for validation 18 of a subsequent submission 9 signal 2. A key 6 may comprise a plurality of
 30 signal matches 5.

A next key trajectory 7 vectors validation 18 to the next key 6, or, if the terminal key 6t, results in forwarding match results 33 for authorization 27, by absence of next key trajectory 7 in one embodiment. Next key trajectories 7 are a sequential organizational facility for keys 5 6.

Next key trajectories 7 may be obviated by having a single key 6 with sufficient contiguous signal matches 5 for validation 18, whereupon the signal matches 5 within the key 6 are sequenced, organized, indexed, or otherwise knowable by software-determined protocol in 10 relation to packaging 13.

As the correspondence of signal match 5 to key 6 varies by embodiment, so too where a next key trajectory 7 leads. Depending upon restrictions that may be imposed in an embodiment, a next key trajectory 7 may lead to a key 6 in the same key file 8 as the last key 6, a key 6 in 15 another key file 8, or the same key 6 if the key 6 holds a plurality of signal matches 5.

Next key trajectory 7 provides all or part of a reference to the next key 6 used in validation 18, if there is a next key 6. A next key trajectory 7 may be encrypted 14.

20 A next key trajectory 7 may be combined with other data that may have been or need to be mathematically transposed to determine the next key 6. For example, all or a portion of an account 109 identifier 3, part of a signal match 5, or some portion of packaging 13 may be combined with the next key trajectory 7 as a next key 6 identifier. Next key trajectory 7 may comprise or reference an offset in a key file 8. A next key trajectory 7 may reference a key 25 index entry 62.

A key 6 may include a plurality of next key trajectories 7, in which case a different next key trajectory 7 may be selected based upon signal match 5 results - one or more next key trajectories 7 for a correct signal match 5, likewise for an wrong signal match 5. With a

plurality of next key trajectories 7, a next key trajectory 7 may be selected based upon signal match 5 results, or by software-determined protocol, or a combination thereof.

5 Packaging 15 may be encoded as part of the next key trajectory 7. For example, a next key trajectory 7 may include the signal sequencing 15 that identifies next signal match 5 type 21. In this instance, if the next input signal 2 cannot be of the same type 21 as the next signal match 5, authorization 27 may fail 86. Knowing that at that point, a wrong trajectory protocol 7w may be invoked to avoid identifying a proper key unit 16.

10 A submission 9 comprising identification 3 followed by signature 4a is easier to validate 18 than a submission 9 solely comprising signature 4s: knowing an account identifier 3 provides the means to know what the signature 4a should be.

15 Historically, identification 3 has not been relied upon for security. Signature 4 has played gate-keeper to unauthorized access 39, not account identification 3.

20 An initial key 6i that may ultimately lead to authorized 27 access 39 must associate to an account 109, either directly or by reference. There may be keys 6 for which authorization 27 cannot succeed 86 that may not associate to an account 109 for which access 39 may be obtained. A key unit 16 for which authorized 27 access 39 is unobtainable is referred to as a fake key 6w.

25 Organize key units 16 as an optimization. Various conventions of organizing or indexing accounts 109, keys 6, and key files 8 may be employed. In alternate embodiments, the same organizing principles may be applied at the level of key 6, key file 8, or account 109.

30 Optimally, keys 6 are organized to facilitate rapid search for signal matches 5, particularly for finding initial signals 2i when submission 9 solely comprises signature 4s. Keys 6 may be sorted. For example, keys 6 for initial signals 2i may be arranged in binary sorted order by signal type 21 and signal 2.

Key files 8 may be organized by account 109, or by transmission type 11. Key files 8 may be organized by signal type 21, with keys 6 within files 8 organized by input ordinal.

Alternately, an initial key file 8_i may comprise all possible initial keys 6_i (of first signal matches 5), possibly organized or indexed by signal type 21. One or more key files 8 may contain one or more indexes 6₁ to keys 6 within their respective files 8.

A key file 8 may include an index, or key files 8 themselves be indexed. The next key trajectory 7 may provide next key 6 lookup via an index 6₁. A key file 8 may include an index 6_{1i} to initial signal keys 6_i. The index 6₁ may comprise key trajectories 7, including key trajectories 7 to possible first keys 6_i, which may be organized by transmission type 11 and/or signal type 21.

Figure 14 depicts an example of key 6 indexing. Key 6 indexing 6₁ or organization is recommended when submission solely comprises signature 4s where a user may input signals 2 in any user-determined manner. Depicted in Figure 14 is a key file 801 with a key index 6₁, specifically an initial key index 6₁₁. The depicted initial key index 6₁₁ contains references to keys 6_i that contain at least initial signals 2.

In the Figure 14 example, only initial keys 6_i are indexed. In this example, checking possible initial keys 6_i constitutes initial key trajectory 7₁. One or more next key trajectories 7 in an initial key 6_i may indicate keys 8 for succeeding signal matching 5, like links in a chain, so only an index of initial keys 6_i is required. Alternately, a single key 6 may contain all necessary signal matches 5 for validation 18.

A key index 6₁ may reference keys 6 in different files 8. As depicted in the Figure 14 example, initial key index 6₁₁ entries 6₂ reference keys 6 of the same input signal type 21. Initial key code keys 210, for example, reference keys 6210 in the same file 801 as the index 6₁₁, while keystroke timing keys 6211 referenced by the keystroke timing index entry 211 reside in another key file 802. Key indexing 6₁ is an optimization.

A key code & mouse click key index entry 217 is depicted in Figure 14 as an example of a composite signal 2. The key code & mouse click key index entry 217 may reference keys 6 comprising multiple signal matches 5, one for each simple signal 2 (key code 210 and mouse click 212), or, alternately, reference multiple keys 6, each with simple signal matches 5 that altogether comprise the composite signal 2.

Without key file 8 organization or key indexing 61, more keys 6 may need to be considered than just those keys 6i for initial signal matches 5. With next key trajectories 7 referring to subsequent keys 6, optimally, only potential initial keys 6i need be searched to commence validation 18.

Figure 15 depicts post-submission validation 180: input signals 2 are accumulated 47 and submission 9 completed 46 before validation 18 commences. Figure 16 depicts incremental validation 181: validation 18 is concurrent with submission 9 transmission 1. In other words, with incremental validation 181, validation 18 may progress with each signal 2 or transmission 1.

Submission termination 23 must be known using post-submission validation 180. This is a potential drawback: unless software-determined protocol determines submission termination 23, passive termination 77 cannot be accomplished using post-submission validation 180; active termination 78 must be used. For full user-determined submission 9, employ incremental validation 181, which has the concomitant advantage of immediate knowledge of authorization failure 86, allowing wrong key trajectory 7w protocol interposing.

Figure 17 depicts the validation 18 process, which is similar regardless whether post-submission validation 180 or incremental validation 181 is employed.

Incremental validation 181 may commence once the first transmission 1 completes, or, in a more sophisticated embodiment, ongoing 88 with signal input 2. In a concurrent validation

181 embodiment, initial signal keys may be accumulated 50 and subsequent unmatched keys discarded 51 concurrent with transmission 1, on a signal-by-signal 2 basis.

Validation 18 commences by accumulating possible keys 55 based upon signal match 54
 5 between signals 2 of the first transmission 1 and possible initial signal keys 52. For subsequent transmissions 1, accumulated keys are discarded 59 by failure to match signals 57. Match results 33 are passed to authorization 27 when there are no keys remaining 73 or no next key trajectories 7 for remaining keys 75. As long as there are remaining keys 34 with next key trajectories 74, the process of discarding keys that don't match 51 continues 818.

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Figure 18 & 19 depict examples of the access authentication 97 process. Figures 18 & 19 illustrate an example of one-to-one correspondence between signal match 5 and key 6.
 Through access to one or more keys 6 which may reside in one or more key files 8, validation 18 produces signal match results 33, upon which authorization 27 permits access
 15 29, allows retry 28 of submission 9, or denies access 27.

Full submission 9 comprises a set of signals 2 upon which access 39 may be granted 72. Incomplete submission 9 comprises a set of signals 2 to which additional user input is ongoing 88, and for which by themselves 2 authorization 27 would not succeed 86.

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In an example depicted by Figure 18, the first trajectory 7_1 is to a key 6_i in a key file 8_i determined by signal type 21. Keep in mind that this process may be repeated for all possible initial keys 6_i . For example, consider key 108 transmission 1 input 2, with two possible corresponding signals 2: key (character) codes 210, and timing of key strokes (rhythm) 211.
 25 As an example, a key unit 16 of key code signal type 21 might be accessed to search keys 6 for signal matches 5 of key code 210 signals 2. It may be, for example, that user-selected signal selection was employed, with initial key code 210 signals 2 for the first input to be ignored, and key rhythm 211 used. A key code 210 match 5 may be found, but it would be wrong in this example, though with incremental signal matching 5, this would not be known
 30 at first. A key unit 8 of key rhythm 211 signal types 21 would also find a match 5 after the

second key code (as rhythm is the timing between successive keystrokes), this time (in this example) for the correct user. In this example, the key 6 with rhythm 211 signal match 5 may have sequence packaging 15 indicating that key code 210 is ignored for this transmission 1. So, in this example of incremental validation 181, initial signal input 2 has multiple signal matches 5, narrowing possibilities in the initial transmission 1 to two possible accounts meriting validation 18 consideration. In this example, subsequent input signals 2 narrow validation 18 to a single account 109 by a sequential process of elimination.

So, with incremental validation 181 there may need to be a plurality of input signals 2 before signal match 5 may effectively commence. In the example above, where key rhythm 211 is the first signal 2 to be matched 5, two key code 210 signals 2 must be input before key rhythm 211 may even be considered.

In the example of Figure 18, validation 18 accesses three key files 8 through successive key trajectories 7, bundling match results 33 for authorization 27. In the depicted example, input signals 2 are validated 18 in input order interactively 88 with input 2. In other words, validation 18 is incrementally contemporaneous 88 with submission 9. In an alternate embodiment with alternate sequencing 15, input signal 2 validation 18 may not commence until submission 9 is completed 46. The described example facilitates rapid authorization 27 by incremental validation 18. Actually, while access 39 may marginally be accelerated by incremental validation 18, only lack is authorization 86 is notably rapidly facilitated, as continued input 2 of a submission 9 that cannot possibly be validated 18 may be interrupted so that a user may retry 63.

Figure 19 depicts an example of an embodiment employing a wrong trajectory protocol 7w. Wrong trajectory protocol 7w is employed as a means of obfuscation targeted at computer monitoring devices. In the depicted example, keys 6 are constructed with multiple key trajectories 7, with at least one trajectory to a succeeding key 6 whereupon authorization 27 may succeed 72, and at least one trajectory 7w whereupon access 39 is hopeless (fake keys 6w). In the example, signal match 77 in the initial key 77 in the initial key file 8i mismatches.

In this case, key trajectory 7w leads to a fake key 6w that cannot result in successful authorization 86: whatever key 6 or key file 8 pinball is used, authorization fails 86.

5 Trajectories 7 may be selected non-deterministically. This suggestion is most effective when there are multiple possible trajectories 7, including wrong key trajectories 7w, that augur either for authorization success 72 or failure 86.

10 For example, a key 6 may contain six next key trajectories 7, three of which are wrong key trajectories 7w. Depending upon signal match 5 results, one of the three right or wrong trajectories 7 are non-deterministically chosen. This example presupposes sequences of keys 6 strung together by next key trajectories 7 that play out to authorization 27. It is possible for different next key trajectories 7 to diverge to different (possibly duplicate) keys 6 that later converge back to the same key 6.

15 As described, validation protocols 18 may vary, and different protocols may be combined. Multiple non-deterministic trajectory 7 paths, including wrong trajectory 7w, is one example. In some embodiments, validation protocol 18 authorizing 27 access 39 may use different trajectories 7. Duplicate signal matches 5 in different keys 6 in the same or different key files 8 may be employed to have various paths to authorization 27. As another suggestion,
20 different signal sequencing 15 may be employed to differ trajectories 7.

The following is claimed:

1. Software from computer-readable medium(s) creating the signature portion of a user login account, as at least part of a subsequent validation protocol for login submission, wherein at
5 least part of said signature having at least one user-determined transmission type.
2. Software from computer-readable medium(s) validating a signature comprising a plurality of signals by accessing data from a plurality of keys.
- 10 3. Software from computer-readable medium(s) incrementally validating a signature.
4. A method in software for creating the signature portion of a user login account, comprising at least one transmission, as at least part of a subsequent validation protocol for login submission, comprising the following steps:
15 a) a user determining transmission type of at least one transmission;
b) recording a plurality of signal types for at least one transmission;
c) packaging at least one recorded transmission into at least one key;
d) storing at least one key in at least one file.
- 20 5. A method in software for validating user login submission input data comprising the following steps:
a) accumulating possible keys based upon matching key data to initial input data;
b) discarding accumulated keys based upon failure to match to subsequent input data until validation is completed or by process of elimination impossible.
25
6. Software according to claim 1 whereby said user determining at least one signal type of at least one transmission of said signature.
7. Software according to claim 6 whereby said user-determined signal type is of a user-
30 determined transmission type.

8. Software according to claim 1 wherein said signature comprising the entirety of login submission.

5 9. Software according to claim 2 wherein said validating by accessing data from a plurality of keys stored in one or more files, wherein said keys are in storage locations not contiguous.

10. Software according to claim 9 wherein said keys are stored in the same file.

10

11. Software according to claim 2 wherein said keys are stored in different files.

12. Software according to claim 2 employing at least one next key trajectory as part of said validating.

15

13. Software according to claim 3 wherein said validating comprising signal matching, whereby said matching may be successful with an inexact match between stored data and corresponding login submitted input data.

20 14. Software according to claim 3 whereby said validating terminating passively.

15. Software according to claim 14 wherein said terminating passively having been user determined during creation of said signature validation protocol.

25 16. The method according to claim 4 whereby said user determining at least one signal type of at least one transmission for said subsequent validation.

17. The method according to claim 4 whereby said user determining a plurality of transmission types from a plurality of said recorded transmissions.

30

18. The method according to claim 4 whereby recording a plurality of signal types emanating from a single transmission.

19. Software according to claim 4 storing at least one fake key.

5

20. The method according to claim 4 wherein packaging at least one next key trajectory in said key.

10

21. The method according to claim 4 wherein packaging a plurality of next key trajectories in said key.

22. The method according to claim 21 whereby said different next key trajectories are to keys in different files.

15

23. The method according to claim 4 wherein at least one transmission comprising input from a plurality of devices.

ABSTRACT

Computer login may comprise any user-determined submission. Account identification may be inferred by signature rather than explicitly stated. A plurality of discontinuous data blocks in a plurality of files may be employed for validation. The paths to data used in
5 validation may be multifarious, regardless of the prospects for successful authorization.

RELATED U.S. APPLICATION DATA

This application has the identical disclosure to provisional application 60/286,457 filed on April 26, 2001.

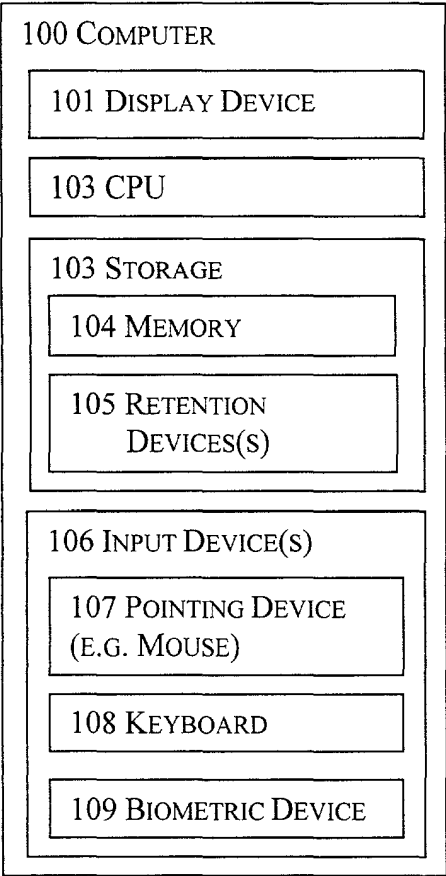


FIGURE 1

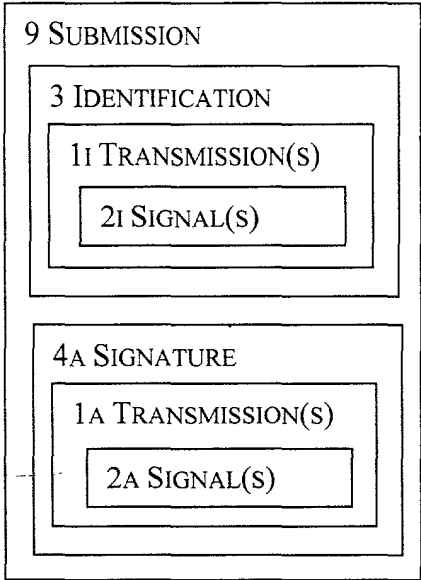


FIGURE 3

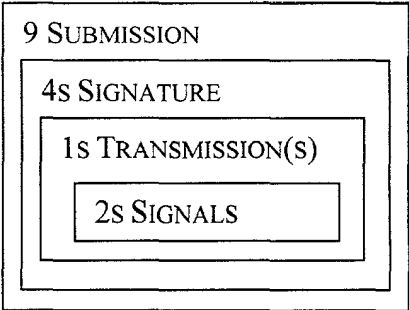


FIGURE 4

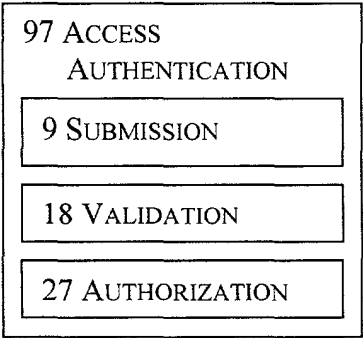


FIGURE 2

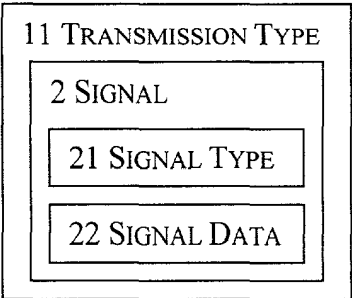


FIGURE 5

Sheet 2 of 10

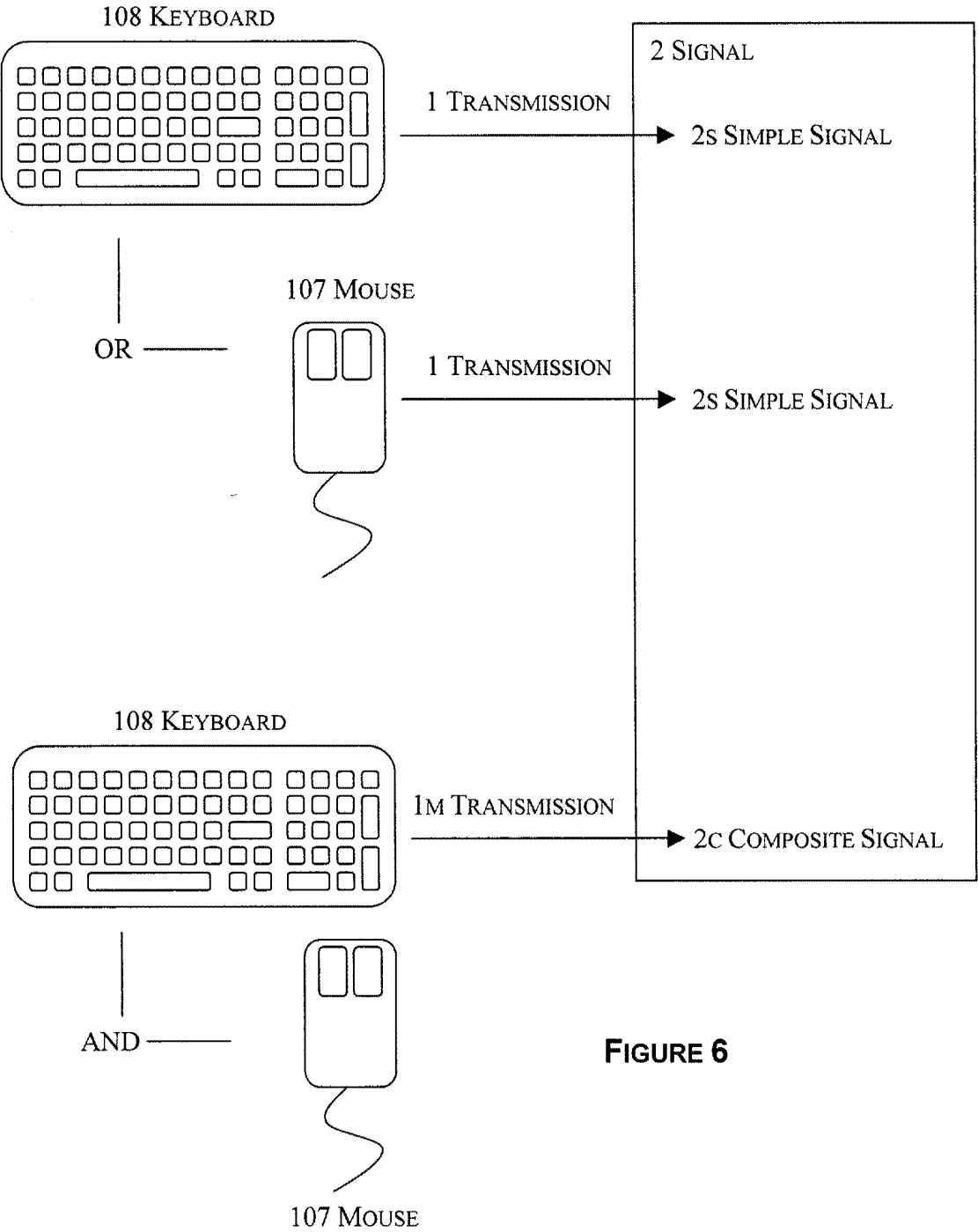


FIGURE 6

Sheet 3 of 10

78 ACTIVE TERMINATION

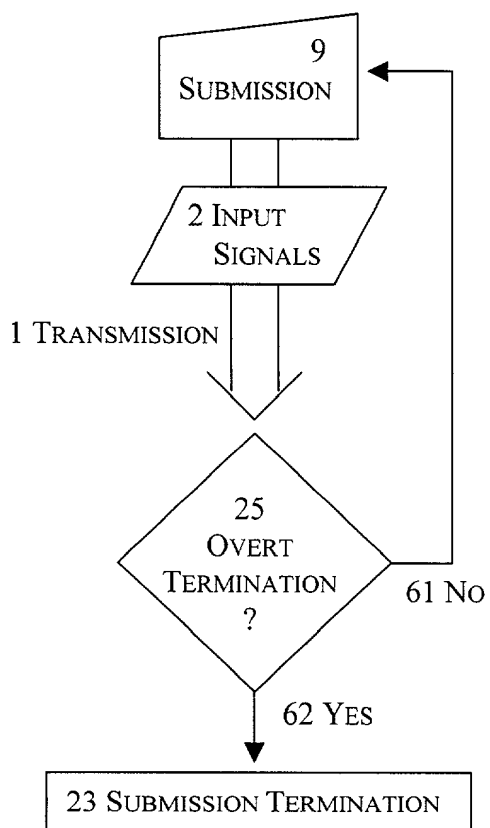


FIGURE 7

77 PASSIVE TERMINATION

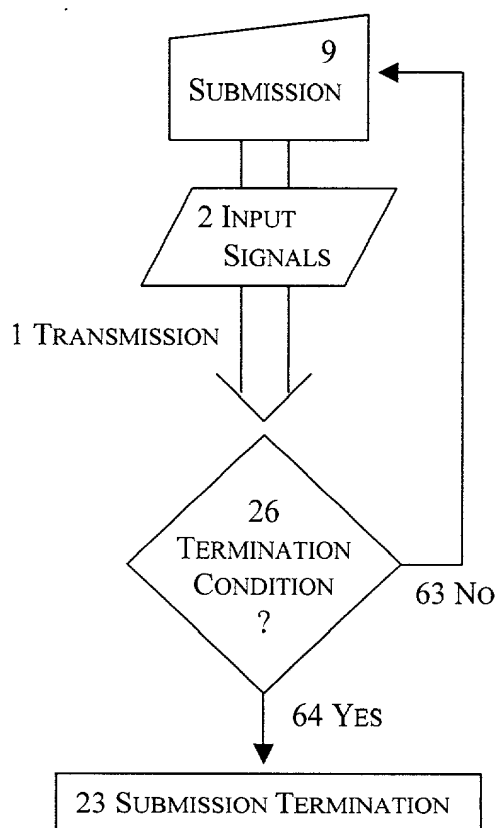


FIGURE 8

Sheet 4 of 10

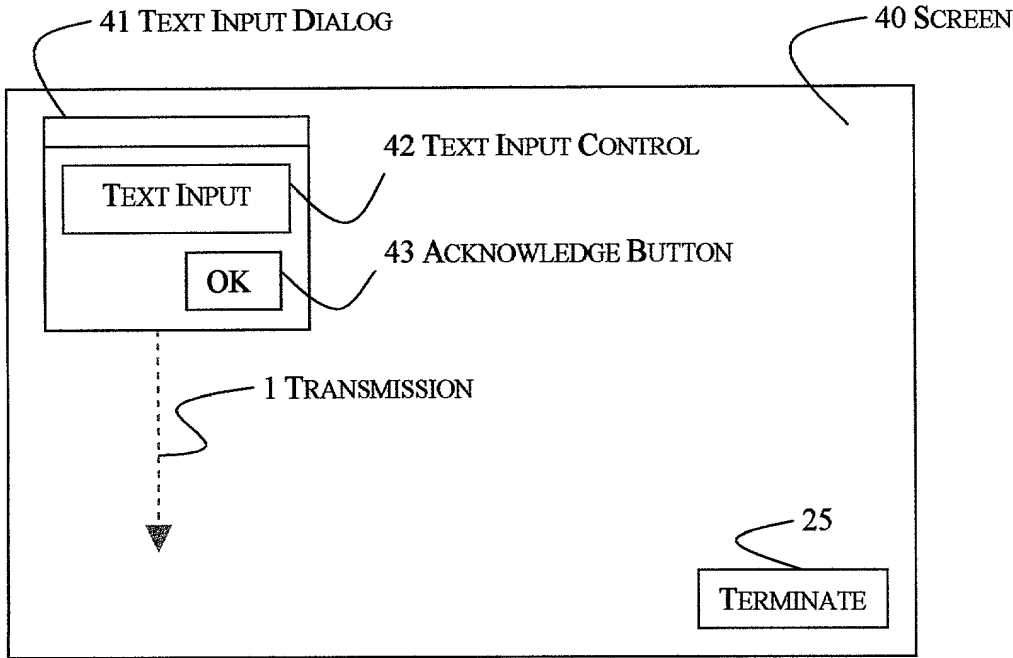


FIGURE 9

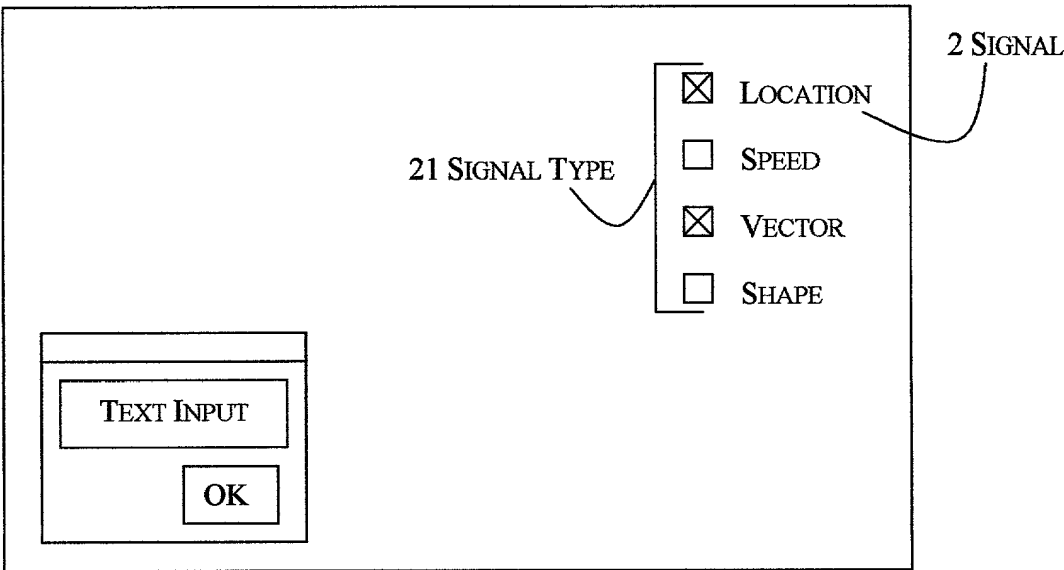


FIGURE 10

Sheet 5 of 10

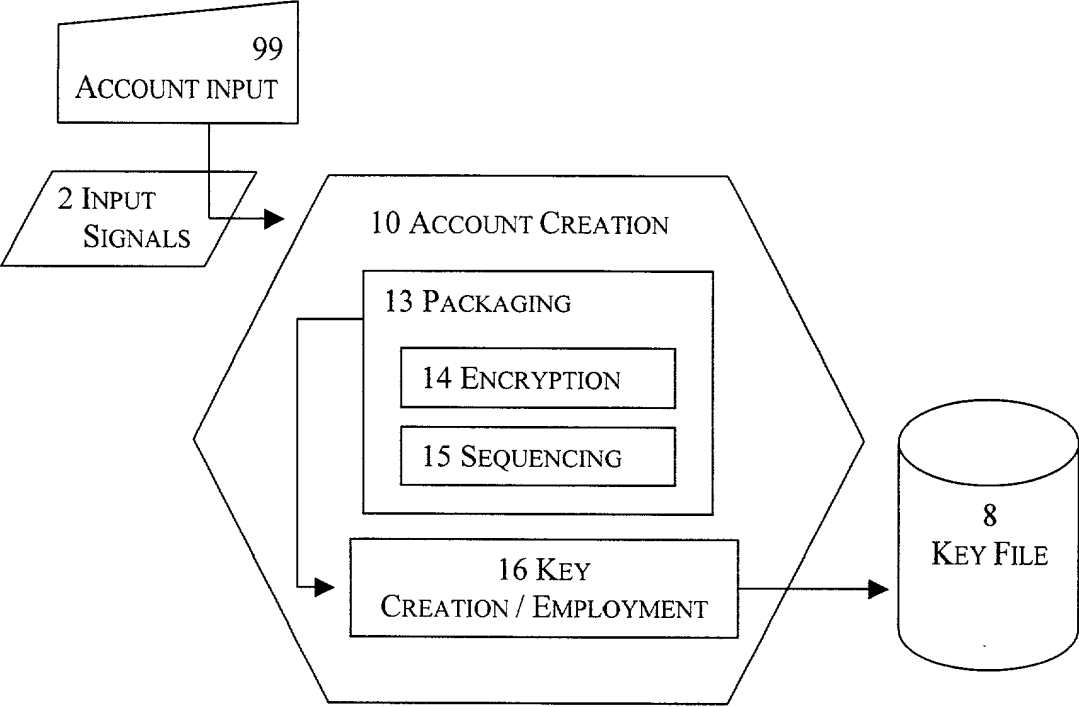


FIGURE 11

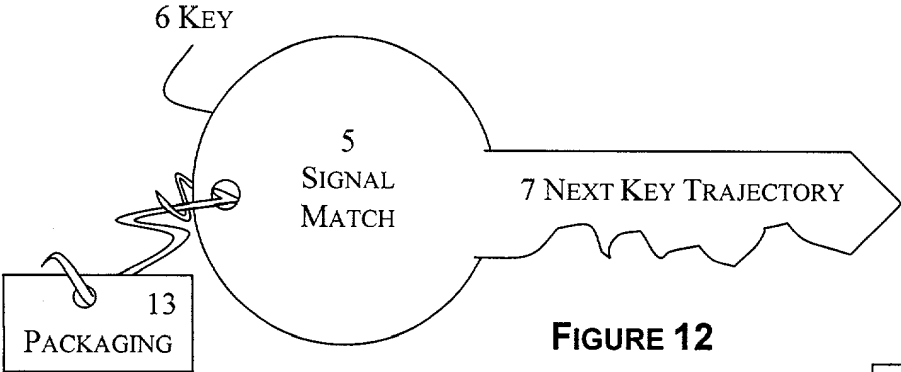


FIGURE 12

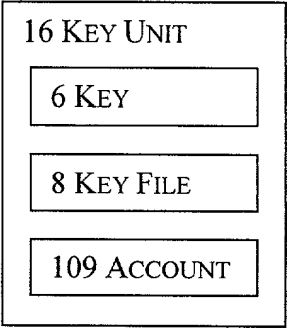
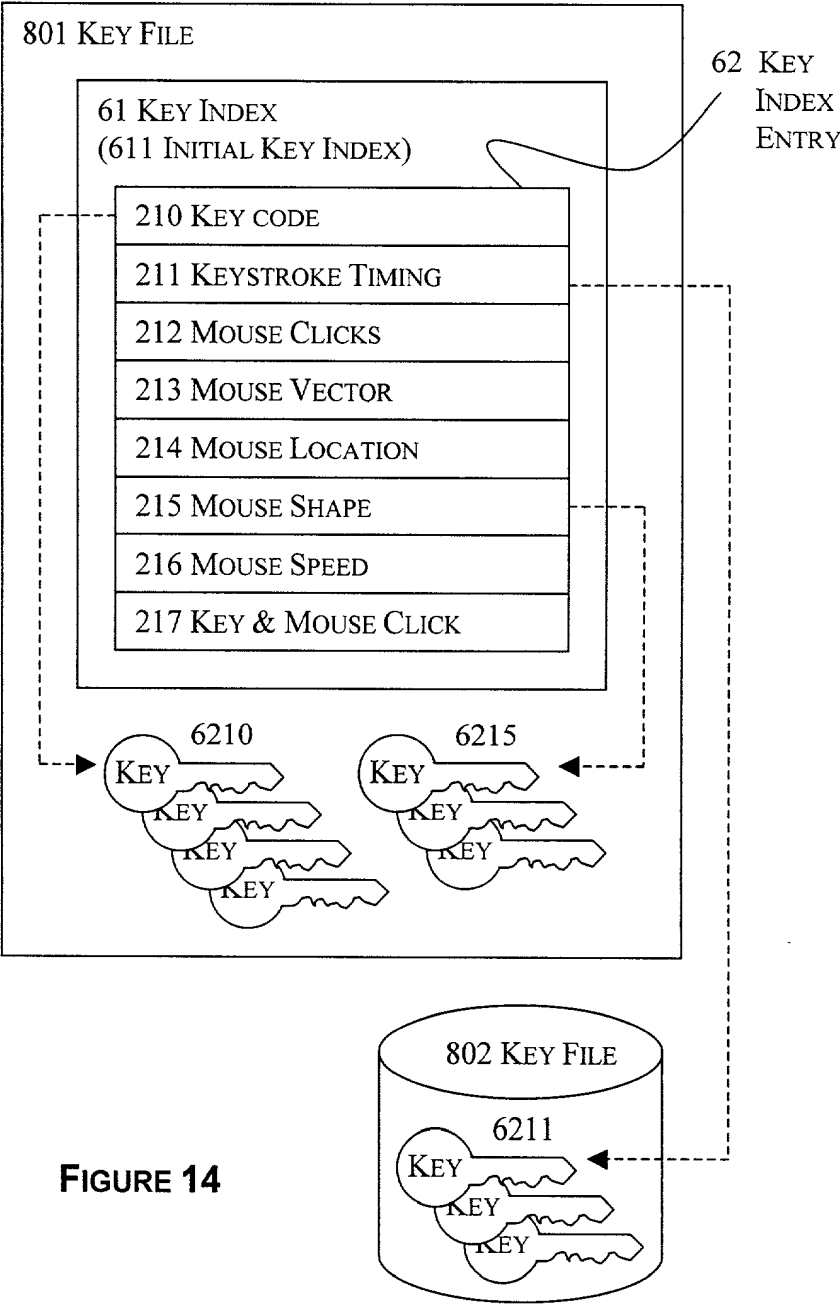


FIGURE 13



Sheet 7 of 10

180 POST-SUBMISSION VALIDATION

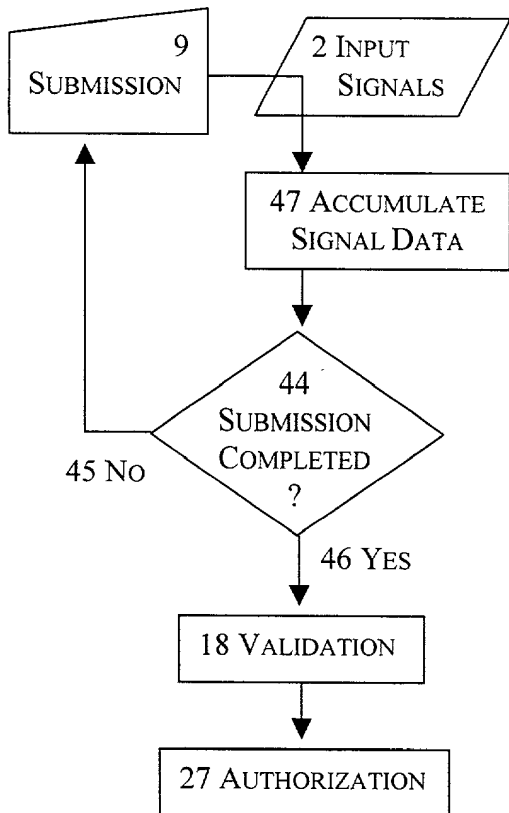


FIGURE 15

181 INCREMENTAL VALIDATION

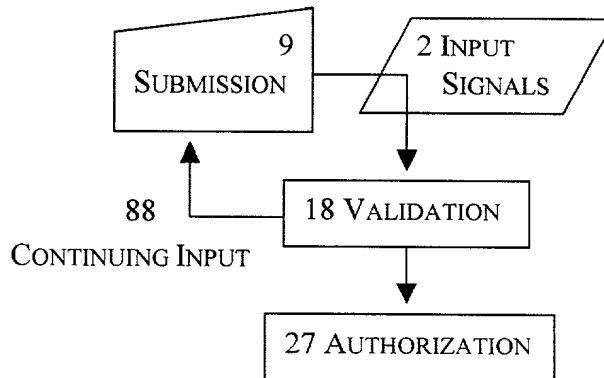


FIGURE 16

Sheet 8 of 10

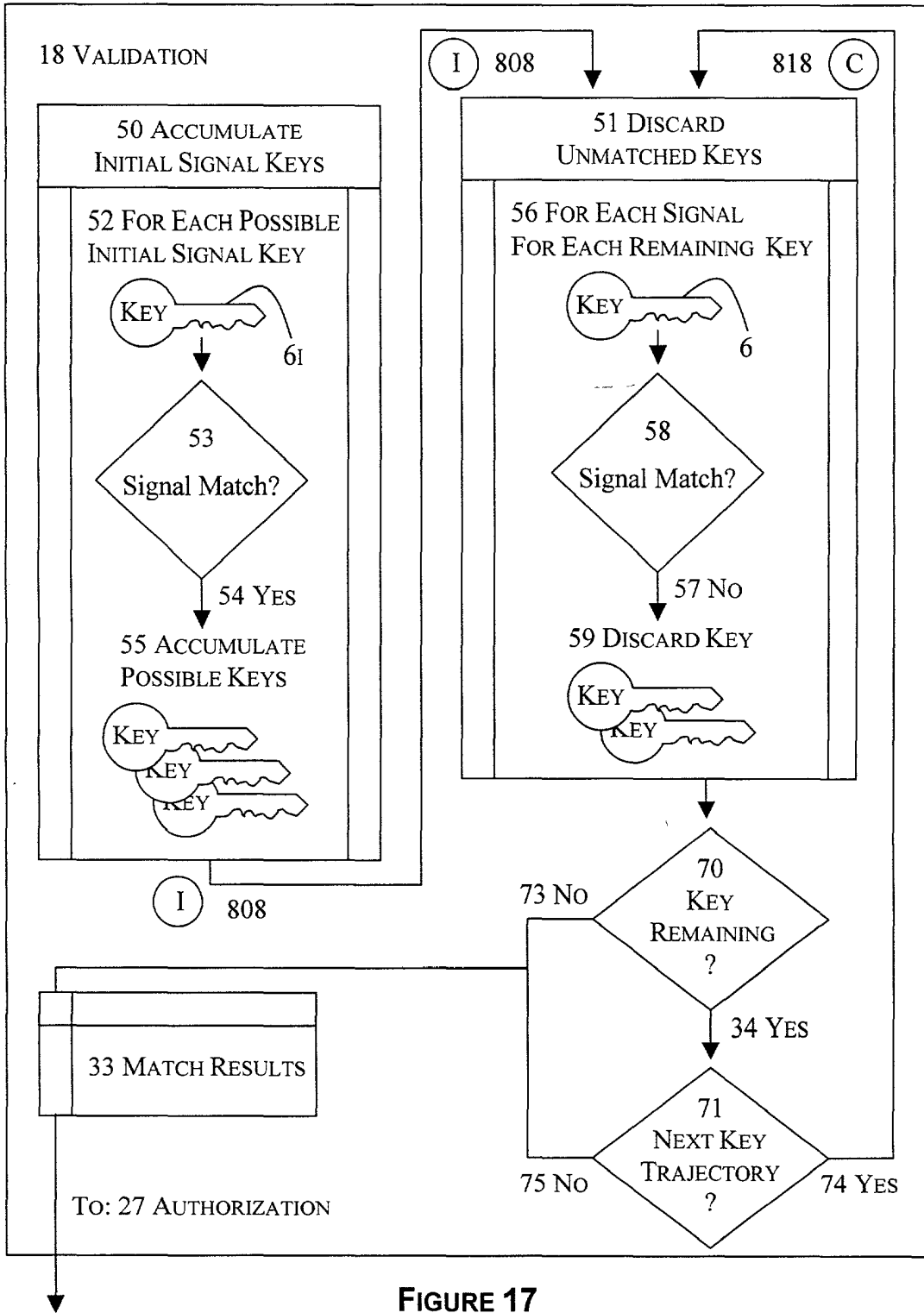
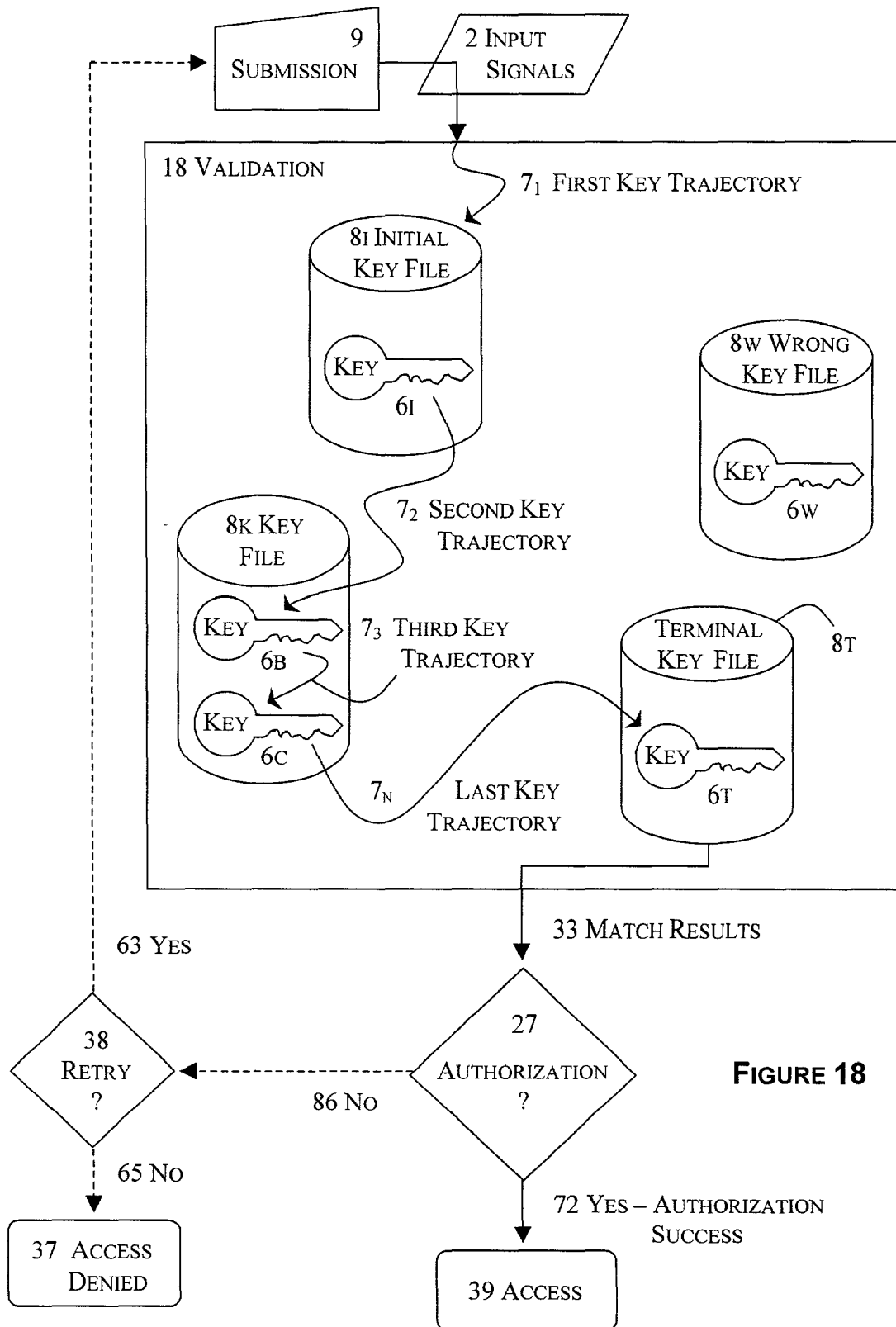


FIGURE 17

Sheet 9 of 10



Sheet 10 of 10

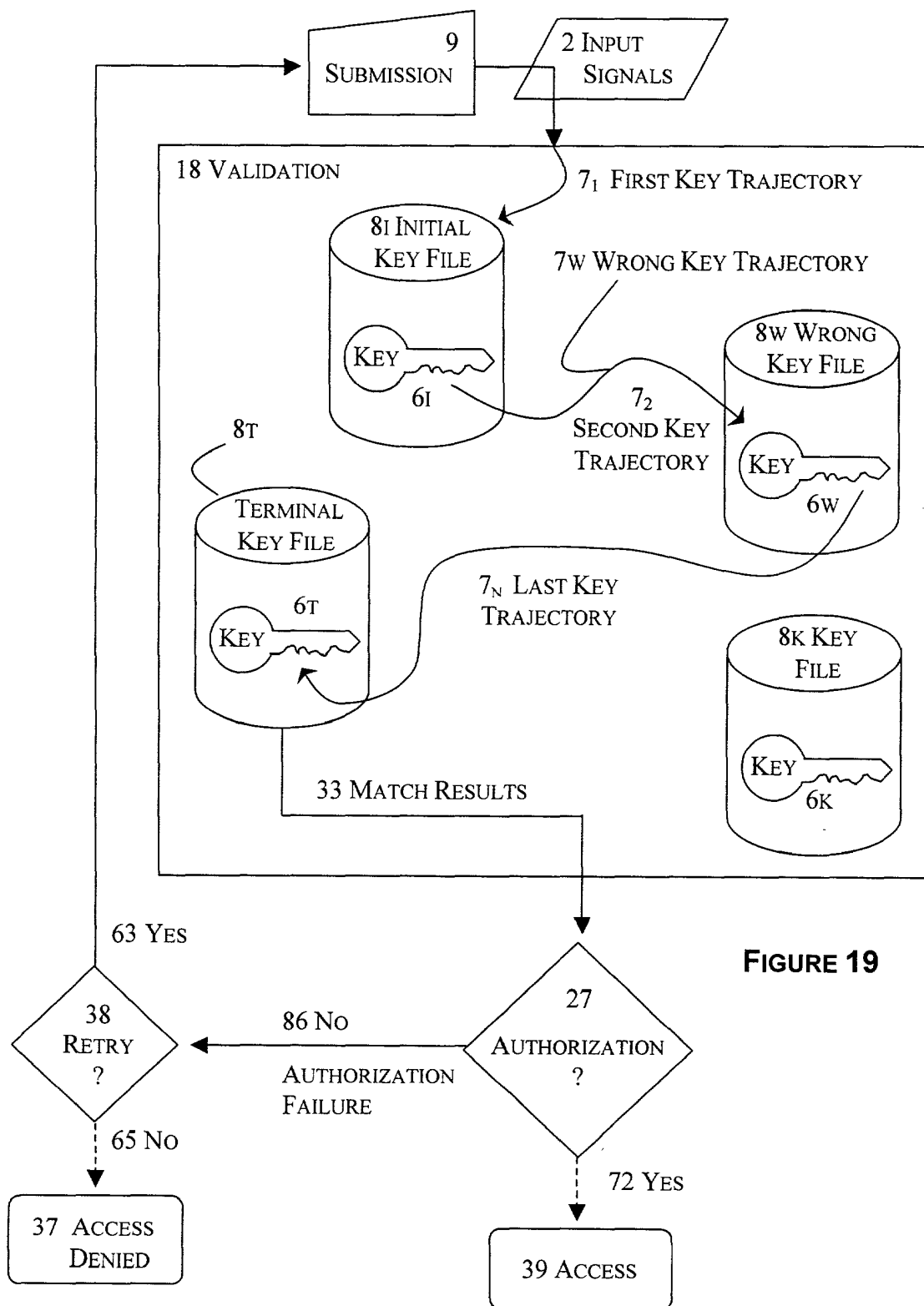


FIGURE 19

12-22-04

2131

Application No.: 10/090,520

Filed: 03/04/2002



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Regarding the application:

Title: Computer login multiplicity

Number: 10/090,520

CLAIM AMENDMENT

Priority: 04/26/2001

Commissioner for Patents
Mail Stop Non-Fee Amendment
Box 1450
Alexandria, VA 22313-1450

Sir/Madam:

Following are amended claims. Deletions are indicated by brackets [], while additions are underlined.

Please examine the following claims.

What is the status of initial examination regarding this application? The non-provisional application was filed March 4, 2002, over 2 1/2 years ago.

Respectfully submitted,

Gary Odom

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telephone: (503) 524-8371

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Dated: December 18, 2004

Application No.: 10/090,520

Filed: 03/04/2002

Claims

1. (currently amended) Software creating a user signature subject to subsequent validation, wherein at least part of said signature [having] comprises at least one user-determined transmission type.

2. (previously presented) Software validating a signature comprising a plurality of signals by accessing data from a plurality of keys.

3. (previously presented) Software incrementally validating a signature while receiving signature input.

4. (currently amended) A computer-implemented method for creating a user signature comprising at least one transmission,
said signature subject to subsequent validation,
said method comprising the following steps:
receiving user determination of a transmission type of at least one transmission;
recording a plurality of signal types for at least one transmission;
packaging [and recording] at least one recorded transmission into at least one key.

5. (currently amended) A computer-implemented method for validating user input data comprising the following steps:
accumulating possible keys based upon matching key data to initial input data;
discarding accumulated keys based upon failure to match to subsequent input data until completing validation or by process of elimination determining validation impossible.

6. (currently amended) Software according to claim 1, wherein receiving said user determination of at least one signal type of at least one transmission of said signature.

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7. (currently amended) Software according to claim 6, wherein said user-determined signal type is of a user-determined transmission type.

8. (currently amended) Software according to claim 1, wherein said signature [comprising] comprises the entirety of a resource access submission.

9. (currently amended) Software according to claim 2,
wherein said validating by accessing data from a plurality of keys stored in one or more files,
wherein said keys are in non-contiguous storage locations.

10. (currently amended) Software according to claim 9, wherein said keys are stored in the same file.

11. (currently amended) Software according to claim 2, wherein said keys are stored in different files.

12. (previously presented) Software according to claim 2 employing at least one next key trajectory as part of said validation.

13. (currently amended) Software according to claim 3,
wherein said validating comprises signal matching,
whereby said matching may be successful with an inexact match between stored data and corresponding submitted input data.

14. (currently amended) Software according to claim 3, whereby said [validating] validation [terminating] terminates passively.

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Filed: 03/04/2002

15. (currently amended) Software according to claim 14, wherein said [terminating passively] passive termination [having been] being user-determined during creating said signature validation protocol.

16. (previously presented) The method according to claim 4, wherein receiving said user determination of at least one signal type of at least one transmission.

17. (previously presented) The method according to claim 4, wherein receiving said user determination of a plurality of transmission types from a plurality of said recorded transmissions.

18. (currently amended) The method according to claim 4, whereby recording a plurality of signal types emanating from a single transmission.

19. (original) Software according to claim 4 storing at least one fake key.

20. (currently amended) The method according to claim 4, wherein packaging at least one next key trajectory in said key.

21. (currently amended) The method according to claim 4, wherein packaging a plurality of next key trajectories in said key.

22. (currently amended) The method according to claim 21, whereby said different next key trajectories are to keys in different files.

23. (currently amended) The method according to claim 4, wherein at least one transmission [comprising] comprises input from a plurality of devices.



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/090,520	03/04/2002	Gary Odom		6595
40600	7590	05/23/2005		
GARY ODOM 15505 SW BULLRUSH LANE TIGARD, OR 97223			EXAMINER CERVETTI, DAVID GARCIA	
			ART UNIT 2136	PAPER NUMBER

DATE MAILED: 05/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/090,520

Applicant(s)

ODOM, GARY

Examiner

David G. Cervetti

Art Unit

2136

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 March 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 3/4/2002, 11/4/2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3/4/2002</u> . | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Oath/Declaration

1. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:

- It does not state that the person making the oath or declaration has reviewed and understands the contents of the specification, including the claims, as amended by any amendment specifically referred to in the oath or declaration.
- The clause regarding "willful false statements ..." required by 37 CFR 1.68 has been omitted.

Drawings

2. The drawings filed on November 4, 2004 are objected to because they are not labeled in the top margin as either "Replacement Sheet" or "New Sheet". Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes

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made to the brief description of the several views of the drawings for consistency.

Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 3 (page 5, line 16), 109 (page 5, line 16), 97 (page 6, line 12), 28, 27 (page 15, line 15). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 61-64 (figures 7-8), 213, 216 (figure 14), 44-45 (figure 15), 53, 56, 58, 808,

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70, 71 (figure 17), 63, 65, 72, 86 (figure 18) . Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

5. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

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The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claim 7 recites the limitation "said user-determined signal type" in line 1 of the claim. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 101

8. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

9. Claims 1-3 and 6-15 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims 1-3 state "software creating", "software validating", and "software incrementally validating", software is considered non-statutory subject matter. Dependent claims 6-15 are rejected based on their dependency from claims 1-3.

10. To expedite a complete examination of the application, the claims rejected under 35 U.S.C. 101 (non-statutory) above are further rejected as set forth below in anticipation of applicant amending these claims to place them within the four statutory categories of invention.

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Claim Rejections - 35 USC § 102

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

12. Claims 1, 4, 6-8, and 16-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Zilberman (US Patent Number: 6,442,692).

Regarding claim 1, Zilberman teaches software creating a user signature subject to subsequent validation, wherein at least part of said signature comprises at least one user-determined transmission type (column 4, lines 60-67, column 5, lines 1-27).

Regarding claim 4, Zilberman teaches a computer-implemented method for creating a user signature comprising at least one transmission, said signature subject to subsequent validation, said method comprising the following steps: receiving user determination of a transmission type of at least one transmission; recording a plurality of signal types for at least one transmission; packaging at least one recorded transmission into at least one key (column 7, lines 36-67, column 8, lines 1-39).

Regarding claim 6, Zilberman teaches wherein receiving said user determination of at least one signal type of at least one transmission of said signature (column 4, lines 60-67, column 5, lines 1-27).

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Regarding claim 7, Zilberman teaches wherein said user-determined signal type is of a user-determined transmission type (column 4, lines 60-67, column 5, lines 1-27).

Regarding claim 8, Zilberman teaches wherein said signature comprises the entirety of a resource access submission (column 7, lines 37-67, column 8, lines 1-67).

Regarding claim 16, Zilberman teaches wherein receiving said user determination of at least one signal type of at least one transmission (column 5, lines 1-26).

Regarding claim 17, Zilberman teaches wherein receiving said user determination of a plurality of transmission types from a plurality of said recorded transmissions (column 5, lines 1-26).

Regarding claim 18, Zilberman teaches whereby recording a plurality of signal types emanating from a single transmission (column 5, lines 1-26).

13. Claims 2-3, 5, 12, and 14-15 are rejected under 35 U.S.C. 102(e) as being anticipated by McKeeth (US Patent Number: 6,766,456).

Regarding claim 2, McKeeth teaches software validating a signature comprising a plurality of signals by accessing data from a plurality of keys (column 2, lines 49-67, column 3, lines 1-51).

Regarding claim 3, McKeeth teaches software incrementally validating a signature while receiving signature input (column 3, lines 52-67, column 4, lines 1-28).

Regarding claim 5, McKeeth teaches a computer-implemented method for validating user input data comprising the following steps: accumulating possible keys

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based upon matching key data to initial input data; discarding accumulated keys based upon failure to match to subsequent input data until completing validation or by process of elimination determining validation impossible (column 3, lines 52-67, column 4, lines 1-28).

Regarding claim 12, McKeeth teaches employing at least one next key trajectory as part of said validation (column 6, lines 10-33).

Regarding claim 14, McKeeth teaches whereby said validation terminates passively (column 6, lines 10-33).

Regarding claim 15, McKeeth teaches wherein said passive termination being user-determined during creating said signature validation protocol (column 2, lines 49-67, column 3, lines 1-51).

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Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claims 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over McKeeth as applied to claim 2 above.

Regarding claim 9, McKeeth teaches the limitations as set forth under claim 2 above. Furthermore, McKeeth teaches comparing the information entered by a user to a pattern stored in memory (column 5, lines 29-53). McKeeth does not expressly disclose accessing data stored in one or more files and said keys are in non-contiguous storage locations. However, Examiner takes Official Notice that the use of files to store information was and is conventional and well known in the art. Furthermore, files are often stored in non-contiguous storage locations. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to validate data entered by a user by accessing data stored in one or more files and in non-contiguous storage locations since Examiner takes Official Notice that the use of files to store information was and is conventional and well known in the art.

Regarding claim 10, McKeeth teaches the limitations as set forth under claim 9 above. Furthermore, McKeeth teaches comparing the information entered by a user to a pattern stored in memory (column 5, lines 29-53). McKeeth does not expressly disclose accessing data stored in one file. However, Examiner takes Official Notice that the use

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of files to store information was and is conventional and well known in the art.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to validate data entered by a user by accessing data stored in one file since Examiner takes Official Notice that the use of files to store information was and is conventional and well known in the art.

Regarding claim 11, McKeeth teaches the limitations as set forth under claim 2 above. Furthermore, McKeeth teaches comparing the information entered by a user to a pattern stored in memory (column 5, lines 29-53). McKeeth does not expressly disclose accessing data stored in different files. However, Examiner takes Official Notice that the use of files to store information was and is conventional and well known in the art.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to validate data entered by a user by accessing data stored in different files since Examiner takes Official Notice that the use of files to store information was and is conventional and well known in the art.

16. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over McKeeth as applied to claim 3 above, and further in view of Garcia (US Patent Number: 4,621,334).

Regarding claim 13, McKeeth does not disclose expressly wherein said validating comprises signal matching, whereby said matching may be successful with an inexact match between stored data and corresponding submitted input data. However, Garcia teaches wherein said validating comprises signal matching, whereby

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said matching may be successful with an inexact match between stored data and corresponding submitted input data (column 5, lines 23-68). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to validate access when stored data and submitted data do not match exactly. One of ordinary skill in the art would have been motivated to do so to provide a personal identification system unique to the individual that cannot be utilized by a criminal even if the basic information were known (Garcia, column 1, lines 15-67).

17. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zilberman as applied to claim 4 above, and further in view of Wittenberg et al. (US Patent Number: 5,204,966).

Regarding claim 19, Zilberman teaches the limitations as set forth under claim 4 above. Zilberman does not disclose expressly storing at least one fake key (a key for which authorized access is unobtainable). Wittenberg et al. teaches the use of invalid passwords that do not result in authorized access (column 1, lines 35-47, column 5, lines 30-68). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to store at least one fake key. One of ordinary skill in the art would have been motivated to do so to be able to control the validity of keys (Wittenberg et al., column 1, lines 35-47).

18. Claims 20-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zilberman as applied to claim 4 above, and further in view of McKeeth.

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Regarding claim 20, Zilberman does not disclose expressly wherein packaging at least one next key trajectory in said key. However, McKeeth teaches wherein packaging at least one next key trajectory in said key (column 6, lines 10-33). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to package at least one next key trajectory in said key. One of ordinary skill in the art would have been motivated to do so to grant user access to the computer in the event of a satisfactory match (McKeeth, column 2, lines 1-30).

Regarding claim 21, Zilberman does not disclose expressly wherein packaging a plurality of next key trajectories in said key. However, McKeeth teaches wherein packaging a plurality of next key trajectories in said key (column 6, lines 10-33). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to package a plurality of next key trajectories in said key. One of ordinary skill in the art would have been motivated to do so to grant user access to the computer in the event of a satisfactory match (McKeeth, column 2, lines 1-30).

Regarding claim 22, Zilberman does not disclose expressly whereby said different next key trajectories are to keys in different files. However, McKeeth teaches whereby said different next key trajectories are to keys in different files (column 6, lines 10-33). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use next key trajectories to keys in different files. One of ordinary skill in the art would have been motivated to do so to grant user access to the computer in the event of a satisfactory match (McKeeth, column 2, lines 1-30).

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Regarding claim 23, Zilberman does not disclose expressly receiving input from a plurality of devices. However, McKeeth teaches wherein at least one transmission comprises input from a plurality of devices (column 3, lines 10-28). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the input from a plurality of devices to create a user signature . One of ordinary skill in the art would have been motivated to do so to grant user access to the computer in the event of a satisfactory match (McKeeth, column 2, lines 1-30).

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Conclusion

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David G. Cervetti whose telephone number is (571) 272-5861. The examiner can normally be reached on Monday-Friday 7:00 am - 5:00 pm, off on Wednesday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz R. Sheikh can be reached on (571) 272-3795. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DGC


AYAZ SHEIKH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100



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Group Art Unit: 2136

2136
JFW

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Regarding the application:

Title:	Computer login multiplicity	Examiner:	Cervetti, David Garcia
Number:	10/090,520	Art Unit:	2136
Priority:	April 26, 2001	REPLY TO EXAMINER OFFICE ACTION	

Mail Stop Non-Fee Amendment
Commissioner for Patents
Box 1450
Alexandria, VA 22313-1450

Sir/Madam:

This is filed responsive to the Examiner's office action dated May 23, 2005.

In compliance with 37 CFR 1.121(c)(2) for claim amendments, deletions are indicated by strike-through, or double brackets [[]] for five consecutive characters or less, while additions are underlined.

Please examine the following claims.

Please note a new correspondence address and phone number.

Respectfully submitted,

A handwritten signature, likely of Gary Odom, consisting of a stylized 'G' followed by a checkmark-like flourish.

Gary Odom

123 NW 12th Avenue, #1332; Portland, OR 97209
telephone: 206.529.5146 fax: 775.942.8525

Dated: July 12, 2005

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Claims

1. (currently amended) A computer-implemented system for Software creating a user signature subject to subsequent validation,
wherein at least part of said signature comprises at least one user-determined transmission type.
2. (currently amended) A computer-implemented system for Software validating a signature comprising ~~a plurality of signals by accessing data from a plurality of keys~~ at least in part at least one composite signal from a plurality of devices.
3. (currently amended) A computer-implemented system for Software incrementally validating a signature while receiving signature input.
4. (previously presented) A computer-implemented method for creating a user signature comprising at least one transmission,
said signature subject to subsequent validation,
said method comprising the following steps:
receiving user determination of a transmission type of at least one transmission;
recording a plurality of signal types for at least one transmission;
packaging at least one recorded transmission into at least one key.
5. (previously presented) A computer-implemented method for validating user input data comprising the following steps:
accumulating possible keys based upon matching key data to initial input data;
discarding accumulated keys based upon failure to match to subsequent input data until completing validation or by process of elimination determining validation impossible.

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6. (currently amended) A computer-implemented system ~~Software~~ according to claim 1, wherein receiving said user determination of at least one signal type of at least one transmission of said signature.

7. (currently amended) A computer-implemented system ~~Software~~ according to claim 6, wherein said received user-determined signal type is of a user-determined transmission type.

8. (currently amended) A computer-implemented system ~~Software~~ according to claim 1, wherein said signature comprises the entirety of a resource access submission.

9. (currently amended) A computer-implemented system ~~Software~~ according to claim 2, wherein said validating said signature by accessing data from a plurality of keys stored in one or more files,

wherein at least one key has at least one trajectory ~~said keys are in non-contiguous storage locations.~~

10-12. (canceled)

13. (currently amended) A computer-implemented system ~~Software~~ according to claim 3, wherein said validating comprises signal matching, whereby said matching may be successful with an inexact match between stored data and corresponding submitted input data.

14. (currently amended) A computer-implemented system ~~Software~~ according to claim 3, whereby said validation terminates passively.

15. (currently amended) A computer-implemented system ~~Software~~ according to claim 14, wherein said passive termination being user-determined during creating said signature validation protocol.

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16. (previously presented) The method according to claim 4,
wherein receiving said user determination of at least one signal type of at least one
transmission.
17. (previously presented) The method according to claim 4,
wherein receiving said user determination of a plurality of transmission types from a plurality
of said recorded transmissions.
18. (previously presented) The method according to claim 4,
whereby recording a plurality of signal types emanating from a single transmission.
19. (currently amended) The method ~~Software~~ according to claim 4,
wherein storing at least one fake key.
20. (previously presented) The method according to claim 4,
wherein packaging at least one next key trajectory in said key.
21. (previously presented) The method according to claim 4,
wherein packaging a plurality of next key trajectories in said key.
22. (previously presented) The method according to claim 21,
whereby said different next key trajectories are to keys in different files.
23. (previously presented) The method according to claim 4,
wherein at least one transmission comprises input from a plurality of devices.
24. (new) A computer-implemented system according to claim 2,
wherein said signature comprises at least in part one transmission from a single input device.

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25. (new) A computer-implemented system according to claim 2,
wherein validating said signature at least in part using an inexact match.

26. (new) A computer-implemented system according to claim 2,
wherein using an ordinal representing a signal type or transmission type.

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Remarks

Oath/Declaration

A new declaration in compliance with 37 CFR 1.67(a) is enclosed.

Drawings

Applicant thanks Examiner for due diligence in objecting to deficiencies in the drawings.

For comprehensiveness, all drawings are replaced, and are now hopefully in compliance with 37 CFR 1.121(d) and 37 CFR 1.84(p)(5), with the following specific changes from the originally submitted drawings:

- Figure 1, sheet 1: CPU 102 was wrongly numbered;
- Figure 17, sheet 8: items 53 and 58 had the wrong font;
- Figure 18, sheet 9: item 39 had an obscured line;
- Figure 18, sheet 9: item 38 has been renumbered to item 28 to correspond to the reference in the specification.
- Figure 19, sheet 10: item 39 had an obscured line;
- Figure 7, sheet 7: the reference characters (numbers) from items 61-62 have been removed because they were not referenced in the description;
- Figure 8, sheet 7: the reference characters (numbers) from items 63-64 have been removed because they were not referenced in the description;
- Figure 14, sheet 6: the reference characters (numbers) from items 213 & 216 have been removed because they were not referenced in the description;
- Figure 15, sheet 7: the reference characters (numbers) from items 44-45 have been removed because they were not referenced in the description;
- Figure 17, sheet 8: the reference characters (numbers) from items 53, 56, 58, 808, 70, 71 have been removed because they were not referenced in the description;
- Figure 18, sheet 9: the reference characters (numbers) from items 65, 72, 86 have been removed because they were not referenced in the description. Item 63, mentioned by the Examiner for deletion, is referenced on page 16, line 23 in the description.

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- Figure 19, sheet 10: the reference characters (numbers) from items 63, 65 have been removed because they were not referenced in the description.

Examiner cited instances under 37 CFR 1.84(p)(5) of missing reference signs in the drawings mentioned in the description:

- Figure item 3 (mentioned on page 5, line 16): appears in Figure 3 on drawing sheet 1 (and was in the originally submitted drawings);

- Figure item 109 (page 5, line 16): appears in Figure 13 on drawing sheet 5 (and was in the originally submitted drawings);

- Figure item 97 (page 6, line 12): appears in Figure 2 on drawing sheet 1 (and was in the originally submitted drawings);

- Figure item 27 (page 15, line 15): appears in Figure 2 on drawing sheet 1 (and was in the originally submitted drawings);

- Figure item 28 (page 15, line 15): now appears in Figure 18 on drawing sheet 9 (was previously wrongly numbered 38 in the drawing);

Specification

Examiner mentioned the proper form of the Abstract, and put an objection checkmark on the office action summary, but Applicant cannot find fault with the previously submitted Abstract in light of the guidelines provided by the Examiner, 37 CFR 1.72, or MPEP 608.01(b). If Examiner would point out particular deficiencies, Applicant would readily make changes.

Claim Rejections - 35 USC §112

Examiner rejected claim 7 "said user-determined signal type" on the basis of 35 USC §112 as lacking antecedent basis. Applicant respectfully submits that antecedent basis existed in the previously presented claim, but in the interest of compact prosecution, applicant has currently amended the claim to clarify that "said user-determined signal type" refers to the received user-determined signal type ("receiving said user determination of at least one signal type") specified in claim 6. Certainly as amended the aforementioned reference in claim 7 is clear, and especially so in light of the foregoing statement of claim construction and attendant prosecution estoppel.

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Claim Rejections - 35 USC §101

Applicant thanks Examiner for pointing out the non-statutory subject matter claimed previously in independent claims 1-3, and their dependents 6-15. Claims 1-3 are currently amended so as to render the subject matter statutory, and thereby place the claims in condition for allowance.

Claim Rejections - 35 USC §102

USPN 6,442,692 (Zilberman) re: claims 1-4, 6-8, 16-18

Applicant respectfully observes that Zilberman was in no way anticipatory of independent claims 1 & 4, and their attendant dependent claims (6-8 & 16-18), as Zilberman lacked the requisite user determinations as claimed.

Regarding claim 1 and its dependent claims, there is no mention anywhere in Zilberman's specification or claims that suggest Zilberman anticipated a user determining transmission type. This is demonstrated most readily by Zilberman restricting himself keyboard input, a single transmission type. With all due respect, applicant could not determine that Examiner's citation of Zilberman [4:60-5:27] disclosed what Examiner asserted.

To promote further understanding, below is the relevant paragraph defining transmission and transmission type, from page 4, lines 12-17 of the disclosure:

A transmission 1 is user input into the computer 100 via one or more input devices 106, whereupon termination of transmission 1 is recognizable, and resulting in at least one signal 2. There may be different types 11 of transmissions 1, examples of which include mouse 107 movements or clicks, keyboard 108 entry, or combinations thereof. Other types 11 of transmissions 1 are possible with different input devices 106, such as, for example, voice transmission 1 if the computer 100 is equipped with a microphone and speakers.

A transmission, as defined above, "is user input into the computer via one or more input devices". A transmission type, as stated above, is device specific, either by a single device - keyboard input being exemplary, or a combination of devices which may define a type - keyboard + mouse input being exemplary.

The same argument with regard to user determination of transmission type applies to rejection of claim 4 and its dependents as to claim 1: Zilberman offered no anticipation. With all due

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respect, applicant could not determine that Examiner's citation of Zilberman [7:37-8:39] disclosed what Examiner asserted.

Applicant respectfully submits that Zilberman struck out twice in lacking anticipation of claims 6-7, and 16-17 by lacking user determination of: [1] transmission type (from claim 1), and [2] signal type (from claims 6, 7). With all due respect, Examiner's citation of Zilberman [4:60-5:27] did not disclose what Examiner asserted.

Regarding claim 8, respectfully submitted that Zilberman did not appear to anticipate a signature being the claimed "entirety of a resource access submission". With all due respect, applicant could not determine that Examiner's citation of Zilberman [7:37-8:39] disclosed what Examiner asserted.

Zilberman offered no user determination as claimed in rejected claims 1, 4, 6-8, and 16-18, as well as specific dependent claim limitations, as explained foregoing. Thus, Examiner's rejections of claims 1, 4, 6-8, and 16-18 in light of Zilberman under 35 USC §102 are respectfully traversed.

USPN 6,766,456 (McKeeth) re: claims 2-3, 5, 12, 14-15

Claim 2 is currently amended to claim "validating a signature comprising at least in part a composite signal". A composite signal was defined on page 5, lines 1-4 of the disclosure as follows:

A transmission 1 of composite signals 2C comprising a plurality of simple signals 2S is conceivable. For example, a multiple-device 106 transmission 1m produces a composite signal 2C if matching to signals 2 of both devices 106 is required, as does requiring signal match 5 of multiple signal types 21 from a single-device transmission 1.

McKeeth disclosed "The user may input these signals substantially concurrently, or in any agreed upon sequence." [3:18-19] Respectfully submitted that this does not anticipate a composite signal from a single transmission, as "substantially concurrently" does not anticipate simultaneously in a single transmission.

Zilberman disclosed a single device, namely a keyboard, and so failed to anticipate the limitations of claim 2 as currently amended.

Regarding claim 3 and its dependent claims, applicant respectfully traverses Examiner's rejection, as there is no mention found anywhere in McKeeth's specification or claims that suggest McKeeth anticipated "incrementally validating a signature while receiving signature input".

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McKeeth [3:52-4:4] disclosed comparison of user IDs and passwords to stored memory; a conventional prior art validation as far as applicant could tell. McKeeth [4:5-28] disclosed an alternative embodiment requiring what McKeeth disclosed as "an implicit, invisible, or non-apparent act". McKeeth disclosed two separate transmissions, possibly input "substantially concurrently", but each validated separately upon input completion, not incrementally during input as claimed. Respectfully submitted that McKeeth failed to disclose incremental signature validation as claimed.

Regarding claim 5 and its dependent claims, applicant respectfully traverses Examiner's rejection, as there was no found mention anywhere in McKeeth's specification or claims that suggest McKeeth anticipated the validation key processing limitations as claimed. With all due respect, applicant could not determine that McKeeth [3:52-4:28] disclosed what Examiner asserted.

Regarding claim 12, McKeeth [6:10-33] disclosed further implicit input, as mentioned foregoing with regard to claim 5. Respectfully submitted that McKeeth in no way anticipated a next key trajectory. For ready reference, below is a quote from the application regarding next key trajectory, from page 11, lines 17-18.

Next key trajectory 7 provides all or part of a reference to the next key 6 used in validation 18, if there is a next key 6.

Regarding claim 14, McKeeth disclosed a "passive act" as follows:

In performing the passive act, the user may wait a predetermined time intervals between entry of various components of the security information or, for instance, may skip a predetermined letter of each component of the security information. [4:14-19]

By comparison, passive validation as claimed is disclosed in an exemplary manner from page 7, lines 5-7:

Another example: incremental validation 181 permits passive termination 77 via absence of next key trajectory 7, or, alternately, completed signal matching 5 of all relevant keys 6.

McKeeth's "passive act" referred to user submission, not validation as claimed. With all due respect, applicant could not determine that McKeeth [6:10-33] disclosed what Examiner asserted.

Regarding claim 15, with all due respect, McKeeth stated absolutely nothing in Examiner's cited [2:49-3:51] reference that anticipated the concomitant limitation of claim 15, of "passive

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termination being user-determined during creating said signature validation protocol". Again, McKeeth was referring to submission, not validation.

Examiner's rejections of claims 2-3, 5, 12, and 14-15 in light of McKeeth under 35 USC §102 are respectfully traversed.

Claim Rejections - 35 USC §103

USPN 6,766,456 (McKeeth) re: claims 9-11

Regarding claim 9, Examiner conceded that McKeeth never anticipated validation using a plurality of keys. Claim 9 is currently amended to add the limitation of a key having a trajectory.

USPN 6,766,456 (McKeeth) + USPN 4,621,334 (Garcia) re: claim 13

Examiner conceded that McKeeth failed to anticipate inexact signal matching. To cover that defect of anticipation, Examiner combined McKeeth with Garcia. McKeeth, however, failed to anticipate the claimed "incrementally validating a signature while receiving signature input", as argued foregoing, so, with all due respect, Examiner's combination argument for rejection of claim 13 is mooted.

USPN 6,442,692 (Zilberman) + USPN 5,203,966 (Wittenberg) re: claim 19

Examiner conceded that Zilberman failed to anticipate storing a fake key. To cover that defect of anticipation, Examiner combined Zilberman with Wittenberg. Zilberman, however, failed to anticipate the limitations of claim 4, as argued foregoing, so, with all due respect, Examiner's combination argument for rejection of claim 13 is mooted; but that's not all.

Examiner employed Wittenberg's disallowance of particular passwords [1:35-47; 5:30-68] as a partial basis of anticipation of claim 19. With all due respect, Wittenberg and the claim 19 limitation of a fake key are diametric. Wittenberg disclosed a filtering mechanism for impermissible or unacceptable passwords - passwords that would never be permitted for use. Under Wittenberg's system, these impermissible password candidates would never be stored in the system that stores passwords. Claim 19, on the contrary, as a dependent of claim 4, claims storing a fake key in the system, something entirely opposite of Wittenberg. Examiner's prior art rejection of claim 19 is thus respectfully traversed as having no basis of support whatsoever.

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USPN 6,442,692 (Zilberman) + USPN 6,766,456 (McKeeth) re: claim 20-23

Regarding claims 20-23: as argued foregoing, Zilberman failed to anticipate claim 4, the independent claim upon which claims 20-23 are dependent, and so, respectfully submitted, claims 20-23 are allowable over the cited prior art.

Regarding claims 20-23, respectfully submitted that Examiner applied impermissible hindsight in combining Zilberman and McKeeth. Examiner's blithe assertion that "one of ordinary skill in the art would have been motivated... to grant user access..." is insufficient as a justifiable argument of motivation in combining prior art references in light of case law attendant to 35 USC §103(a). There is considerable antecedent consensus in U.S. court decisions that some documentary evidence must exist within the prior art references themselves to justify motivation of a prior art combination as a basis for 35 USC §103(a) rejection.

The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. In re Mills, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990)

A statement that modifications of the prior art to meet the claimed invention would have been "well within the ordinary skill of the art at the time the claimed invention was made" because the references relied upon teach that all aspects of the claimed invention were individually known in the art is not sufficient to establish a prima facie case of obviousness without some objective reason to combine the teachings of the references. Ex parte Levengood, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993). See also In re Kotzab, 217 F.3d 1365, 1371, 55 USPQ2d 1313, 1318 (Fed. Cir. 2000)

"Our case law makes clear that the best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references." Dembiczak, 175 F.3d at 999; see also Ruiz, 234 F.3d at 665 (explaining that the temptation to engage in impermissible hindsight is especially strong with seemingly simple mechanical inventions). This is because "[c]ombining prior art references without evidence of such a suggestion, teaching, or motivation simply takes the inventor's disclosure as a blueprint for piecing together the prior art to defeat patentability—the essence of hindsight." Dembiczak, 175 F.3d at 999. Therefore, we have consistently held that a person of ordinary skill in the art must not only have had some motivation to combine the prior

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art teachings, but some motivation to combine the prior art teachings in the particular manner claimed. See, e.g., *In re Kotzab*, 217 F.3d 1365, 1371 (Fed. Cir. 2000) ("Particular findings must be made as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed."); *In re Rouffet*, 149 F.3d 1350, 1357 (Fed. Cir. 1998) ("In other words, the examiner must show reasons that the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the cited prior art references for combination in the manner claimed."). *Teleflex v. KSR International*, 04-1152 (CAFC 2005).

Regarding claims 20-22, respectfully submitted that McKeeth [2:1-30] failed to anticipate next key trajectories. With all due respect, applicant could not determine that Examiner's citation of McKeeth [2:1-30] disclosed what Examiner asserted.

Regarding claim 23, respectfully submitted that McKeeth [3:10-28] failed to anticipate the claimed "at least one transmission comprises input from a plurality of devices". With all due respect, applicant could not determine that McKeeth [3:10-28], cited by the Examiner, disclosed what Examiner asserted. McKeeth disclosed user input from multiple devices at different times, at best "substantially concurrently", that is, different transmissions; whereas claim 23 clearly claims a single transmission comprising input from multiple devices.

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Canceled Claims

In compliance with CFR 1.121(c)(4), please cancel claims 10-12.

New Claims

New claim 24, dependent upon claim 2, adds a limitation of a signature comprising at least a composite signal from multiple devices (claim 2), and at least one transmission from a single device (claim 24). No known prior art anticipates combined limitations of claim 2 and claim 24.

New claim 25, dependent upon claim 2, adds a limitation of validating a signature at least in part using an inexact match. No known prior art anticipates the combined limitations of claim 2 and claim 25.

New claim 26, dependent upon claim 2, representing a transmission type or signal type using an ordinal. No known prior art anticipates the combined limitations of claim 2 and claim 26.

Applicant respectfully traverses all of Examiner's claim rejections. Applicant thanks Examiner for careful examination of the claims, drawings and disclosure. Applicant respectfully submits that the currently submitted claims and specification are in order for allowance.

Replacement Sheet

Sheet 1 of 10

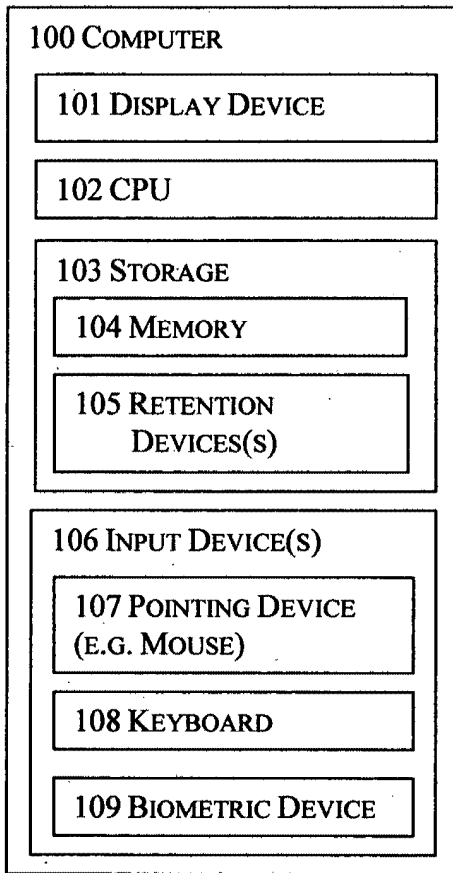


FIGURE 1

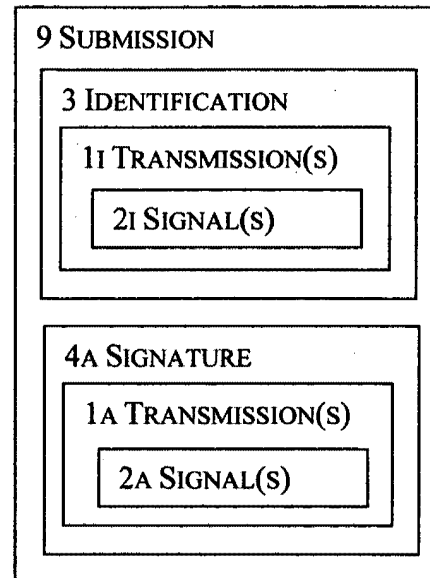


FIGURE 3

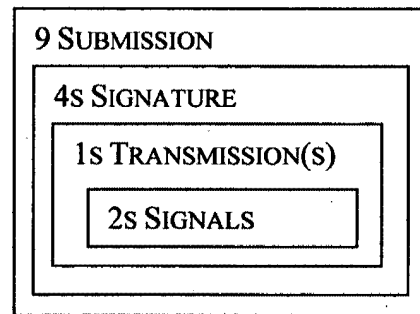


FIGURE 4

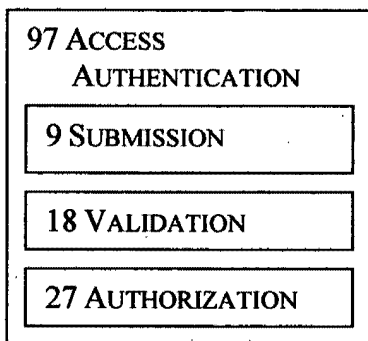


FIGURE 2

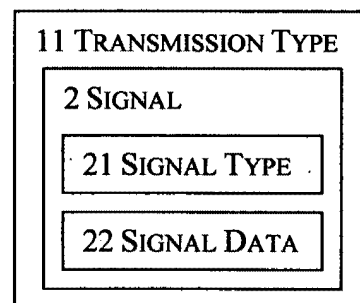


FIGURE 5

Replacement Sheet

Sheet 2 of 10

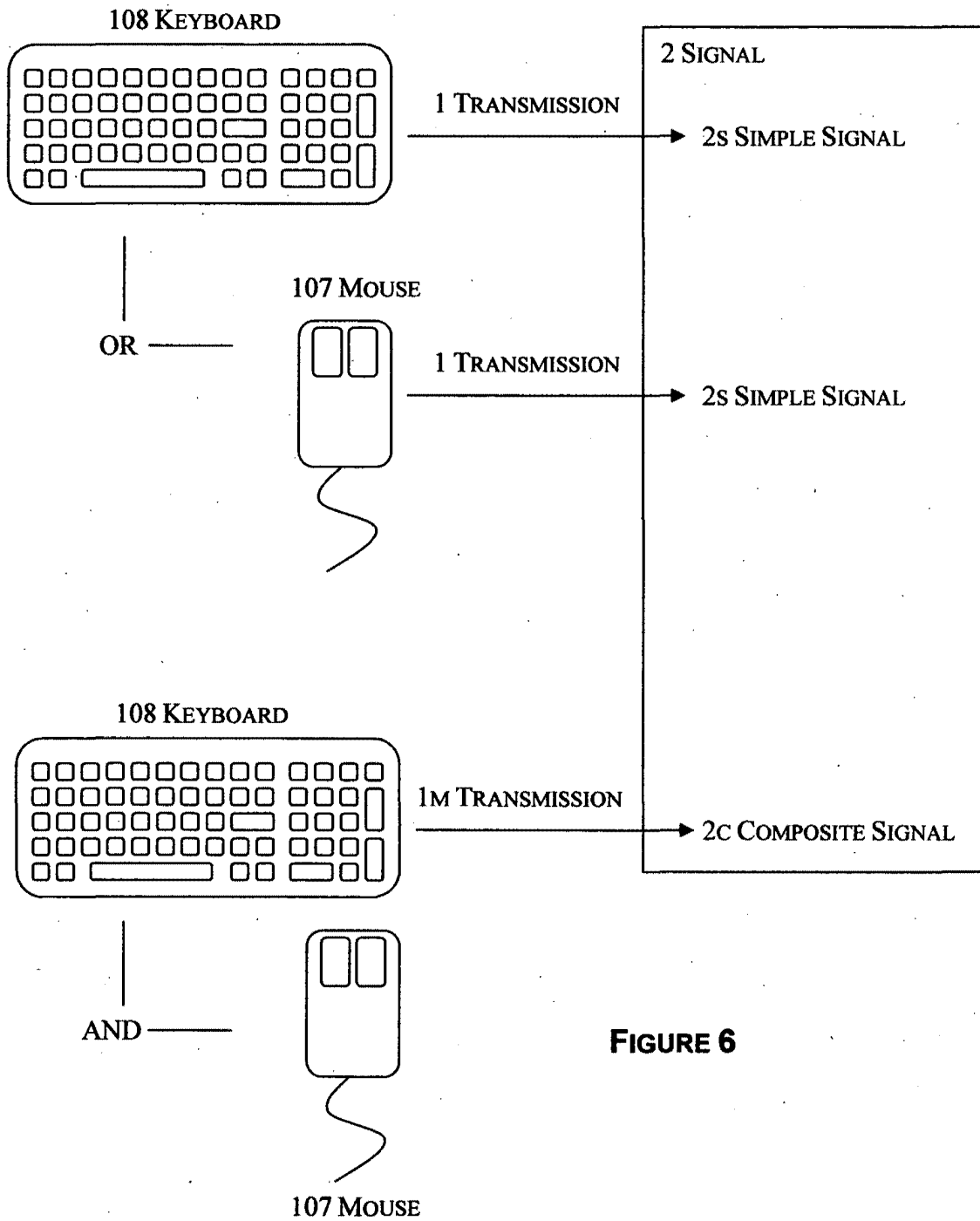


FIGURE 6

Replacement Sheet

Sheet 3 of 10

78 ACTIVE TERMINATION

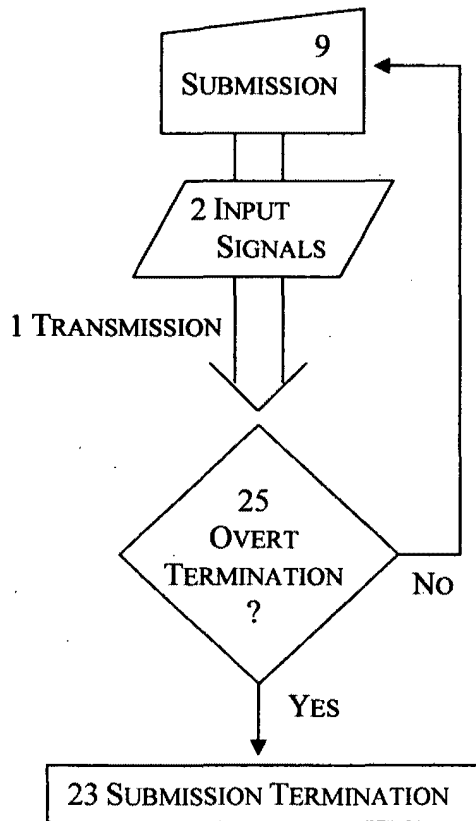


FIGURE 7

77 PASSIVE TERMINATION

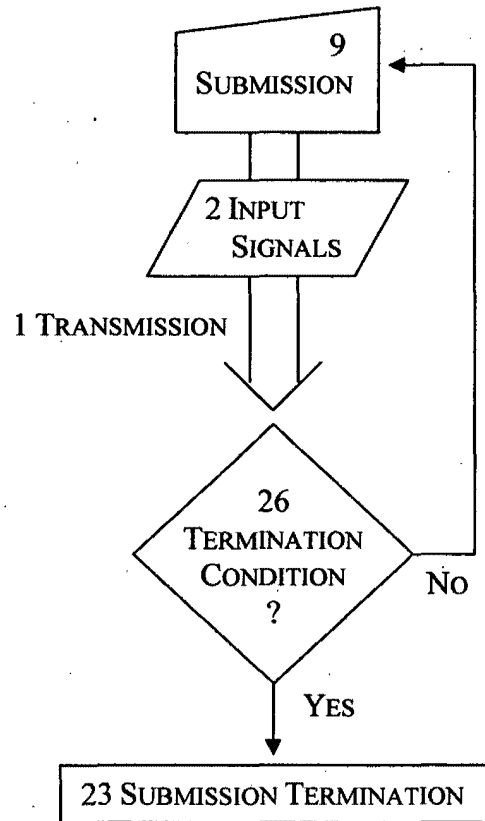


FIGURE 8

Replacement Sheet

Sheet 4 of 10

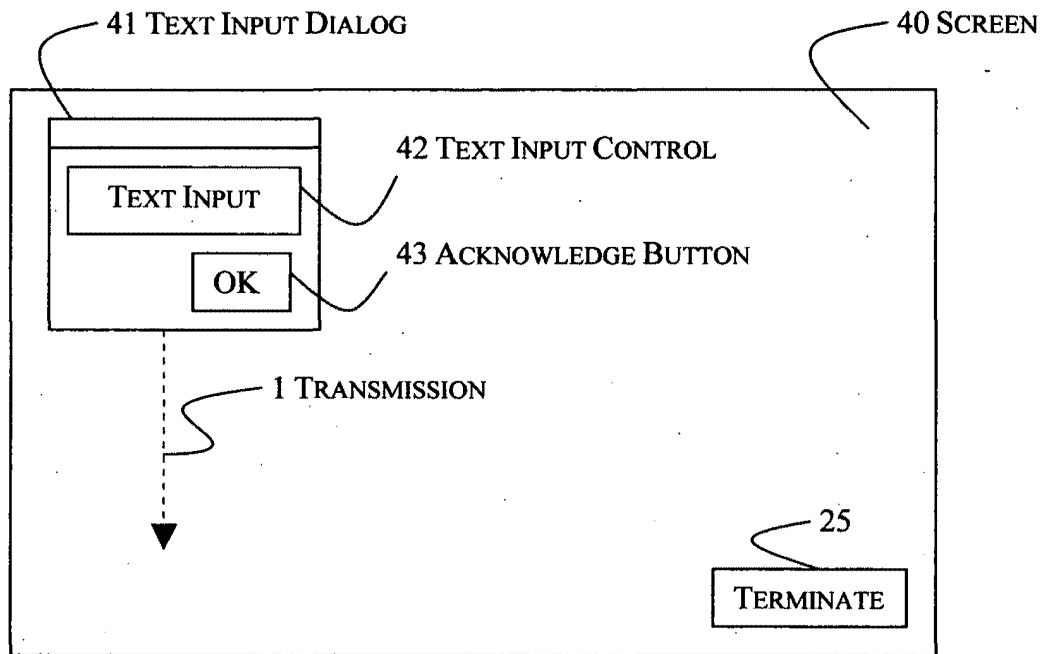


FIGURE 9

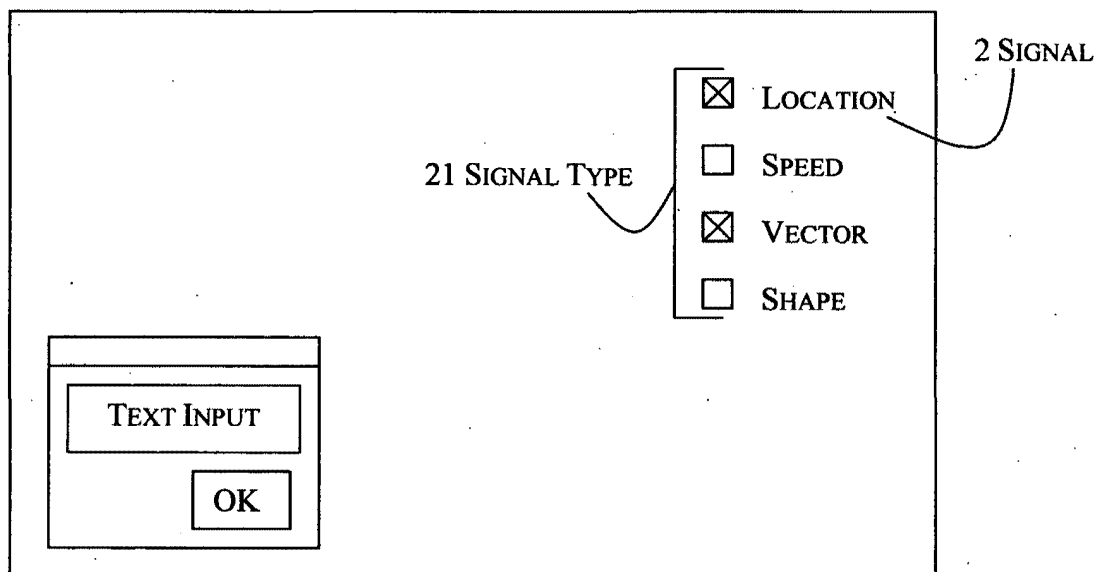


FIGURE 10

Replacement Sheet

Sheet 5 of 10

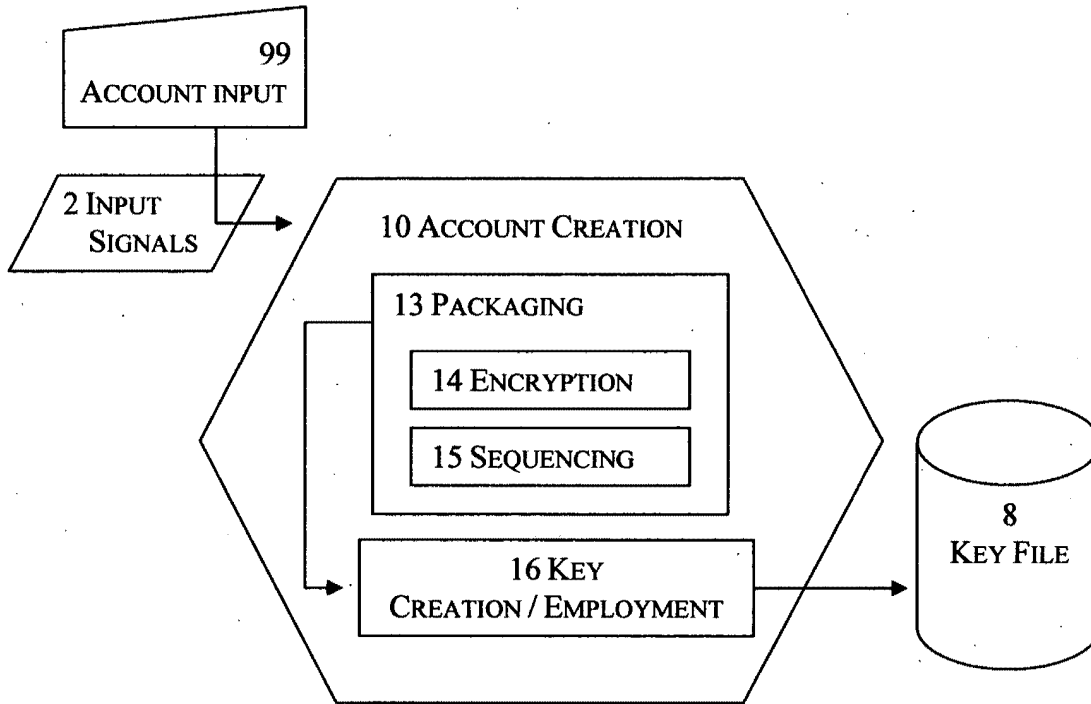


FIGURE 11

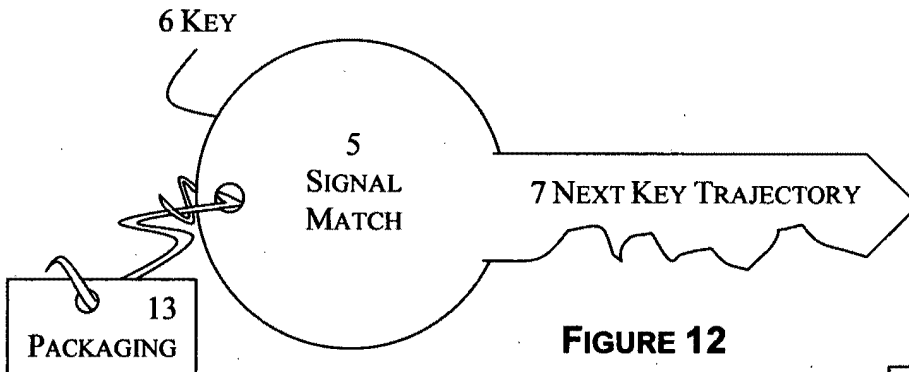


FIGURE 12

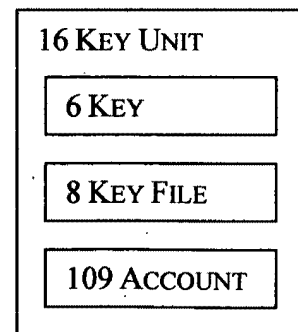


FIGURE 13

Replacement Sheet

Sheet 6 of 10

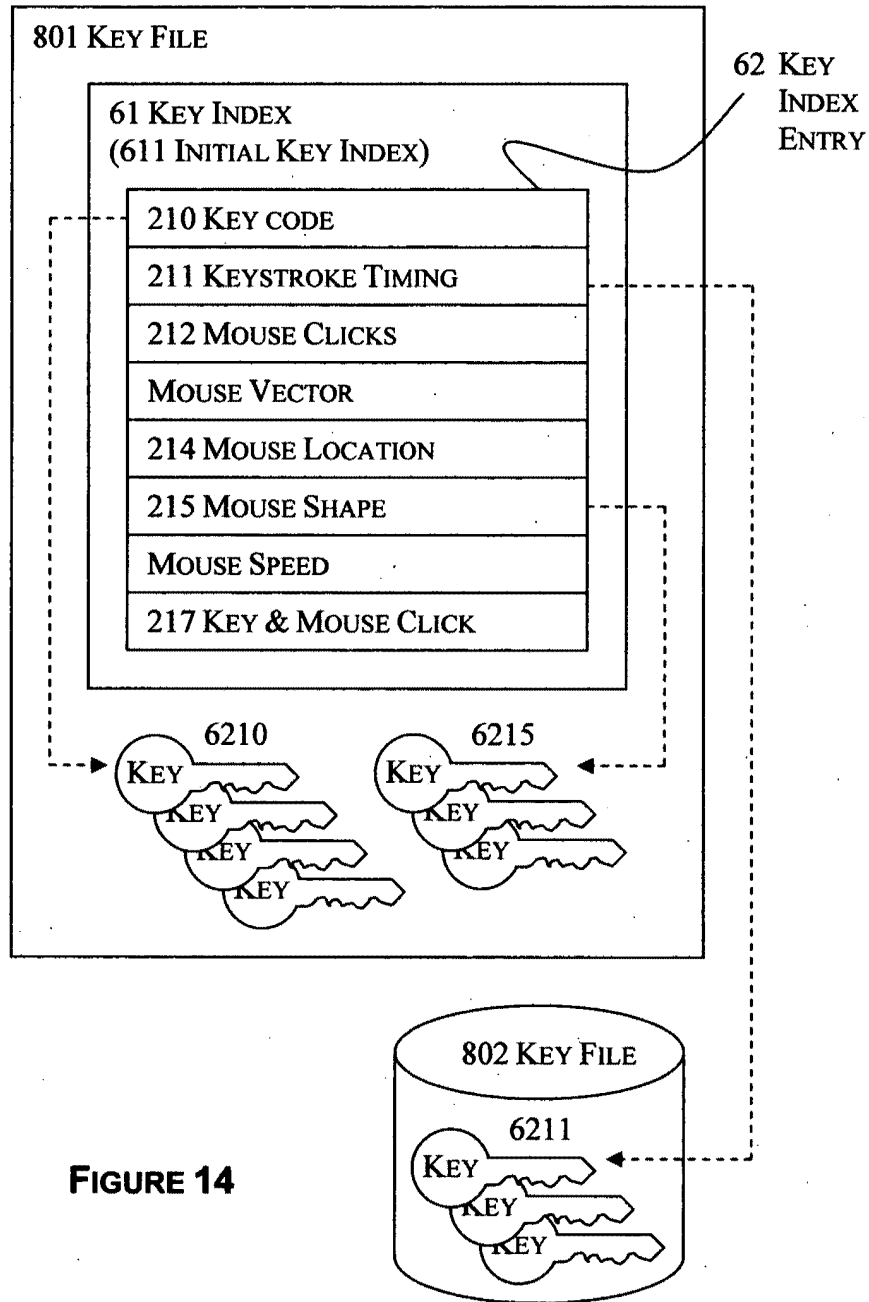


FIGURE 14

Replacement Sheet

Sheet 7 of 10

180 POST-SUBMISSION VALIDATION

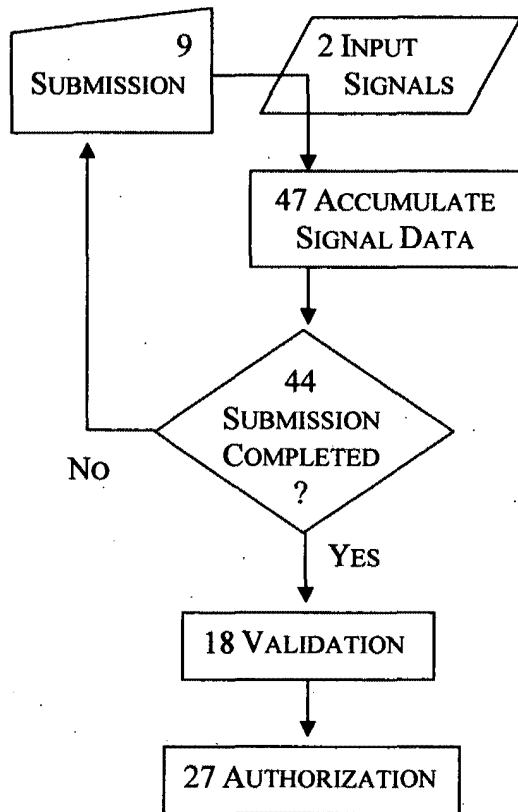


FIGURE 15

181 INCREMENTAL VALIDATION

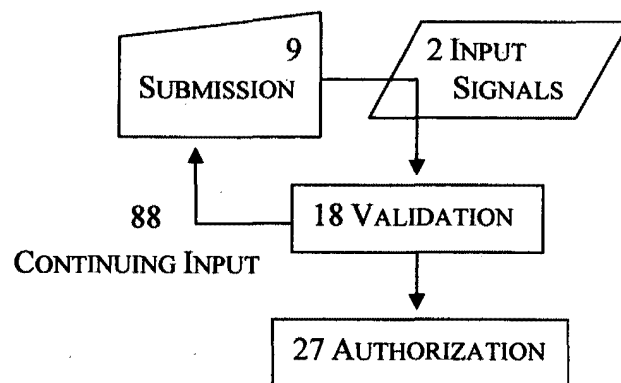
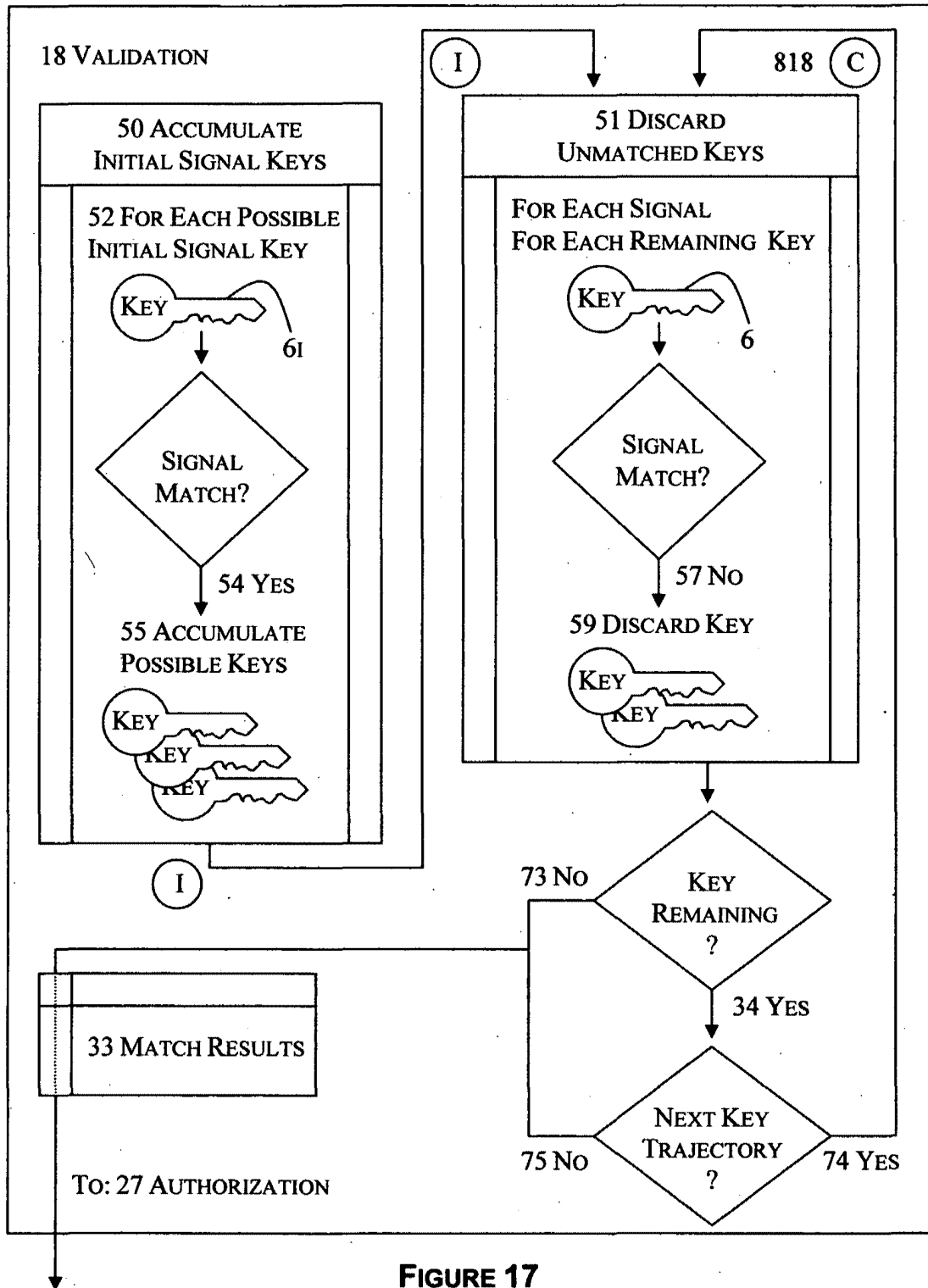


FIGURE 16

Replacement Sheet

Sheet 8 of 10



Replacement Sheet

Sheet 9 of 10

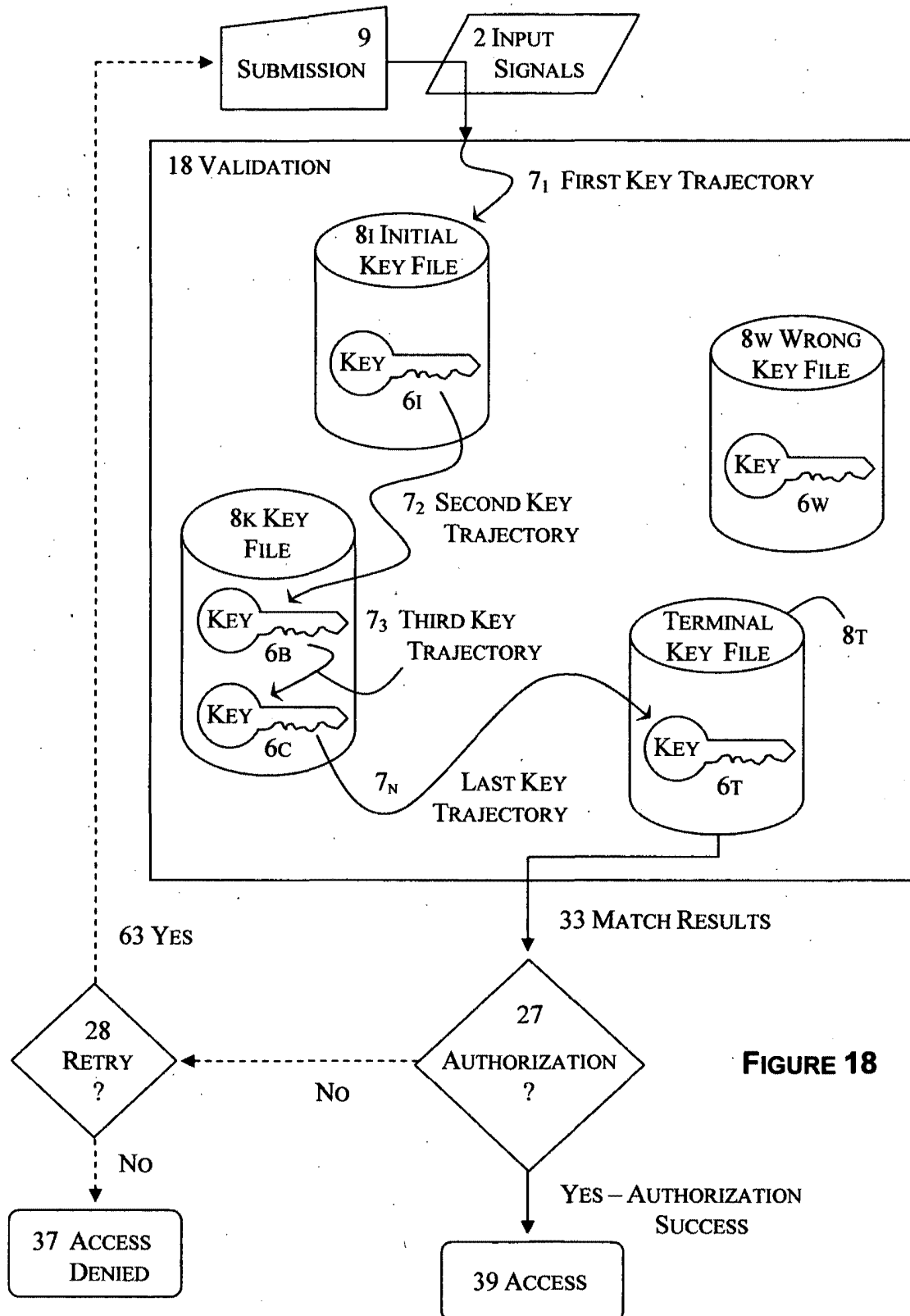


FIGURE 18

Replacement Sheet

Sheet 10 of 10

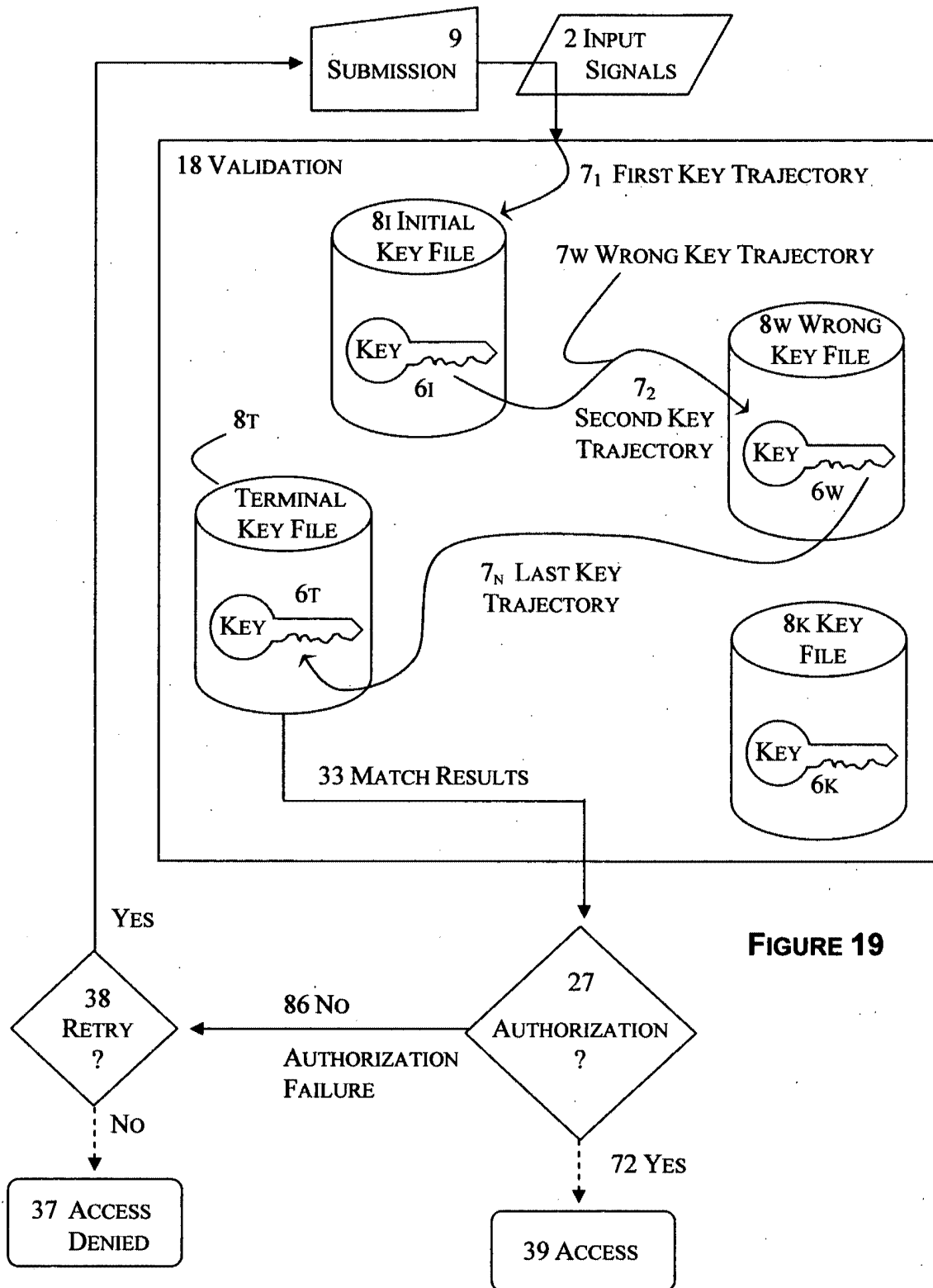
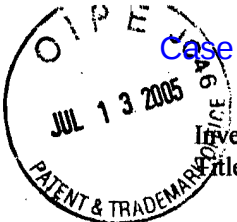


FIGURE 19



Inventor: Gary Odom
Title: Computer login multiplicity

Declaration For Utility Patent Application (37 CFR 1.63)
PTO/SB/01(08-03) OMB 0651-0032

DECLARATION FOR UTILITY PATENT APPLICATION (37 CFR 1.63)

Sole Inventor: Gary Odom

Title: Computer login multiplicity

Application Number: 10/090,520

Group Art Unit: 2136

Filing Date: March 4, 2002

Examiner: Cervetti, David Garcia

As the above-named sole inventor, I hereby declare the following:

- ☒ My residence and address for correspondence are as stated below.
- ☒ My citizenship is the United States of America.
- ☒ I believe I am the original, first and sole inventor of the subject matter claimed and for which a patent is sought for the invention titled: "Computer login multiplicity", the specification of which was filed on 03/04/2002 as United States patent application number 10/090,520, and was most recently amended on 12/18/2004.
- ☒ I hereby claim the benefit under 35 U.S.C. §119(e) of the provisional application listed below.

Application Number	Filing Date (mm/dd/yyyy)
60/286,457	04/26/2001

- ☒ I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment specifically referred to above.
- ☒ I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

Please address correspondence as follows:

123 NW 12th Avenue, #1332
Portland, OR 97209

telephone: (206) 529-5146; fax: (775) 632-5551

Inventor: Gary Odom
Title: Computer login multiplicity

Declaration For Utility Patent Application (37 CFR 1.63)
PTO/SB/01(08-03) OMB 0651-0032

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. §1001, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Signed:



Gary Odom

Date: July 11, 2005

PATENT APPLICATION FEE DETERMINATION RECORD
 Effective October 1, 2001

Application or Docket Number

10/090,520

CLAIMS AS FILED - PART I

	(Column 1)	(Column 2)
TOTAL CLAIMS	23	
FOR	NUMBER FILED	NUMBER EXTRA
TOTAL CHARGEABLE CLAIMS	23 minus 20 =	3
INDEPENDENT CLAIMS	5 minus 3 =	2
MULTIPLE DEPENDENT CLAIM PRESENT		<input type="checkbox"/>

SMALL ENTITY
TYPE ☐OR
OTHER THAN
SMALL ENTITY

RATE	FEE
BASIC FEE	370.00
X\$ 9=	27
X42=	84
+140=	
TOTAL	481

RATE	FEE
BASIC FEE	740.00
X\$18=	
X84=	
+280=	
TOTAL	

* If the difference in column 1 is less than zero, enter "0" in column 2

CLAIMS AS AMENDED - PART II

	(Column 1)	(Column 2)	(Column 3)
	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
Total	23	Minus	23
Independent	5	Minus	5
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM			<input type="checkbox"/>

RATE	ADDI- TIONAL FEE
X\$ 9=	
X42=	
+140=	
TOTAL ADDIT. FEE	

RATE	ADDI- TIONAL FEE
X\$18=	
X84=	
+280=	
TOTAL ADDIT. FEE	

	(Column 1)	(Column 2)	(Column 3)
	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
Total	23	Minus	23
Independent	5	Minus	5
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM			<input type="checkbox"/>

RATE	ADDI- TIONAL FEE
X\$ 9=	
X42=	
+140=	
TOTAL ADDIT. FEE	

RATE	ADDI- TIONAL FEE
X\$18=	
X84=	
+280=	
TOTAL ADDIT. FEE	

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	(Column 1)	(Column 2)	(Column 3)
	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
Total		Minus	
Independent		Minus	
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM			<input type="checkbox"/>

RATE	ADDI- TIONAL FEE
X\$ 9=	
X42=	
+140=	
TOTAL ADDIT. FEE	

RATE	ADDI- TIONAL FEE
X\$18=	
X84=	
+280=	
TOTAL ADDIT. FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20."

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3."

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/090,520	03/04/2002	Gary Odom		6595

40600 7590 12/22/2005

GARY ODOM
 123 NW 12TH AVE., #1332
 PORTLAND, OR 97209

EXAMINER

CERVETTI, DAVID GARCIA

ART UNIT PAPER NUMBER

2136

DATE MAILED: 12/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/090,520

Applicant(s)

ODOM, GARY

Examiner

David G. Cervetti

Art Unit

2136

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 October 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 and 13-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 13-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 July 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

1. Applicant's arguments filed July 13, 2005, have been fully considered but they are not persuasive.
2. Claims 1-9 and 13-26 are pending and have been examined. Claims 10-12 were canceled as per above referenced amendment.

Response to Amendment

3. The objection to the Oath is withdrawn.
4. The objection to the Abstract of the disclosure is withdrawn.
5. The rejection under 35 USC § 101 is withdrawn.
6. Regarding claims 1-4, 6-8, and 16-18, Applicant's argument is based on the disclosure, not on the claimed language. The definition provided by applicant (i.e. "one or more") clearly reads on Zilberman teachings of using a keyboard.
7. Regarding claims 2-3, 5, and 14-15, Applicant's argument is based on the disclosure, not on the claimed language. Furthermore, McKeeth teaches using any input devices used to enter or communicate information to the computer system (column 2, lines 49-67) and to enter the signals in any agreed upon sequence (column 3, lines 1-67). McKeeth also teaches generating a geometric pattern when requesting access and the system may be configured to recognize the pattern under the condition that the user performs the pattern concurrently with scanning a fingerprint (column 6, lines 1-67) and to grant access in the absence of an exact match (column 5, lines 1-67, column 6, lines 1-67, column 7, lines 1-50) provided there is some matching information. Examiner would also like to point out that using an inexact match (i.e. provide for authentication

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even when not a perfect match exists, a threshold level, or grant access if the information entered is statistically similar to some stored value) was conventional and well known (US Patent Nbr 4,621,334 to Garcia, US Patent Nbr 6,311,272 to Gressel).

8. Regarding claim 19, Wittenberg et al. (US Patent Number: 5,204,966, hereinafter Wittenberg) expressly teaches storing a fake key (column 1, lines 1-67). Applicant's argument appears to be based on the assumption that "the system that stores passwords" only stores some specific type of password, even though not claimed.

Assuming arguendo that the claimed invention intends to claim that user passwords and fake passwords are stored within the same space/database/password file/etc, it would have been obvious to one of ordinary skill in the art to store reserved passwords/user names/account names within a database/password file/etc to provide for validation as taught by Wittenberg.

9. Regarding claims 20-23, in response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). Furthermore, MPEP 2144 states "the rationale to modify or combine the prior art does not have to be expressly stated in the prior art; the rationale may be expressly or impliedly contained in the prior art or it may be reasoned from knowledge generally

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available to one of ordinary skill in the art, established scientific principles, or legal precedent established by prior case law. In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). See also In re Kotzab, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000) (setting forth test for implicit teachings); In re Eli Lilly & Co., 902 F.2d 943, 14 USPQ2d 1741 (Fed. Cir. 1990) (discussion of reliance on legal precedent); In re Nilssen, 851 F.2d 1401, 1403, 7 USPQ2d 1500, 1502 (Fed. Cir. 1988) (references do not have to explicitly suggest combining teachings); Ex parte Clapp, 227 USPQ 972 (Bd. Pat. App. & Inter. 1985) (examiner must present convincing line of reasoning supporting rejection); and Ex parte Levengood, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993) (reliance on logic and sound scientific reasoning)". Zilberman and McKeeth are directed to authenticating users to computing systems, using different key trajectories.

Drawings

10. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 44 (figure 15), 63 (figure 18), 86 (figure 19). Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top

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margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

11. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "109" has been used to designate both "account identifier", "keyed-in account name" (page 5), and "biometric device" (fig 1). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

12. This is not a complete list of reference characters included in the drawings but not mentioned in the description or reference characters used to designate different parts.

Specification

13. The disclosure is objected to because of the following informalities: "denies access 27" (page 15, line 15), perhaps 37 was intended. Appropriate correction is required.

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Claim Rejections - 35 USC § 112

14. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

15. Claims 2, 6, 9, and 16-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims are generally narrative and indefinite, failing to conform with current U.S. practice. They appear to be a literal translation into English from a foreign document and are replete with grammatical and idiomatic errors.

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Claim Rejections - 35 USC § 102

16. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

17. Claims 1, 4, 6-8, and 16-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Zilberman (US Patent Number: 6,442,692).

Regarding claim 1, Zilberman teaches a computer-implemented system for creating a user signature subject to subsequent validation, wherein at least part of said signature comprises at least one user-determined transmission type (column 4, lines 60-67, column 5, lines 1-67).

Regarding claim 4, Zilberman teaches a computer-implemented method for creating a user signature comprising at least one transmission, said signature subject to subsequent validation, said method comprising the following steps: receiving user determination of a transmission type of at least one transmission; recording a plurality of signal types for at least one transmission; packaging at least one recorded transmission into at least one key (column 7, lines 36-67, column 8, lines 1-39).

Regarding claim 6, Zilberman teaches wherein receiving said user determination of at least one signal type of at least one transmission of said signature (column 4, lines 60-67, column 5, lines 1-27).

Regarding claim 7, Zilberman teaches wherein said received user-determined signal type is of a user-determined transmission type (column 4, lines 60-67, column 5, lines 1-27).

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Regarding claim 8, Zilberman teaches wherein said signature comprises the entirety of a resource access submission (column 7, lines 37-67, column 8, lines 1-67).

Regarding claim 16, Zilberman teaches wherein receiving said user determination of at least one signal type of at least one transmission (column 5, lines 1-26).

Regarding claim 17, Zilberman teaches wherein receiving said user determination of a plurality of transmission types from a plurality of said recorded transmissions (column 5, lines 1-26).

Regarding claim 18, Zilberman teaches whereby recording a plurality of signal types emanating from a single transmission (column 5, lines 1-26).

18. Claims 2-3, 5, 9, 14-15, and 24-26 are rejected under 35 U.S.C. 102(e) as being anticipated by McKeeth (US Patent Number: 6,766,456).

Regarding claim 2, McKeeth teaches a computer-implemented system for validating a signature comprising at least in part at least one composite signal from a plurality of devices (column 2, lines 49-67, column 3, lines 1-51, column 5, lines 1-67, column 6, lines 1-67).

Regarding claim 3, McKeeth teaches a computer-implemented system for incrementally validating a signature while receiving signature input (column 3, lines 52-67, column 4, lines 1-28, column 6, lines 1-67).

Regarding claim 5, McKeeth teaches a computer-implemented method for validating user input data comprising the following steps: accumulating possible keys based upon matching key data to initial input data; discarding accumulated keys based

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upon failure to match to subsequent input data until completing validation or by process of elimination determining validation impossible (column 3, lines 52-67, column 4, lines 1-28).

Regarding claim 9, McKeeth teaches wherein validating said signature by accessing data from a plurality of keys, wherein at least one key has at least one trajectory (column 5, lines 1-67, column 6, lines 1-67).

Regarding claim 14, McKeeth teaches whereby said validation terminates passively (column 6, lines 10-33).

Regarding claim 15, McKeeth teaches wherein said passive termination being user-determined during creating said signature validation protocol (column 2, lines 49-67, column 3, lines 1-51).

Regarding claim 24, McKeeth teaches wherein said signature comprises at least in part one transmission from a single input device (column 2, lines 49-67, column 3, lines 1-51).

Regarding claim 25, McKeeth teaches wherein validating said signature at least in part using an inexact match (column 5, lines 1-67, column 6, lines 1-67, column 7, lines 1-50).

Regarding claim 26, McKeeth teaches wherein using an ordinal representing a signal type or transmission type (column 5, lines 1-67, column 6, lines 1-67).

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Claim Rejections - 35 USC § 103

19. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

20. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over McKeeth, and further in view of Garcia (US Patent Number: 4,621,334).

Regarding claim 13, McKeeth does not disclose expressly wherein said validating comprises signal matching, whereby said matching may be successful with an inexact match between stored data and corresponding submitted input data. However, Garcia teaches wherein said validating comprises signal matching, whereby said matching may be successful with an inexact match between stored data and corresponding submitted input data (column 5, lines 23-68). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to validate access when stored data and submitted data do not match exactly. One of ordinary skill in the art would have been motivated to do so to provide a personal identification system unique to the individual that cannot be utilized by a criminal even if the basic information were known (Garcia, column 1, lines 15-67).

21. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zilberman as applied to claim 4 above, and further in view of Wittenberg.

Regarding claim 19, Zilberman does not disclose expressly wherein storing at least one fake key (a key for which authorized access is unobtainable). However, Wittenberg teaches the use of invalid passwords that do not result in authorized access (column 1, lines 35-47, column 5, lines 30-68). Therefore, it would have been obvious to

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one having ordinary skill in the art at the time the invention was made to store at least one fake key. One of ordinary skill in the art would have been motivated to do so to be able to control the validity of keys (Wittenberg, column 1, lines 35-47).

22. Claims 20-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zilberman as applied to claim 4 above, and further in view of McKeeth.

Regarding claim 20, Zilberman does not disclose expressly wherein packaging at least one next key trajectory in said key. However, McKeeth teaches wherein packaging at least one next key trajectory in said key (column 6, lines 10-33).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to package at least one next key trajectory in said key. One of ordinary skill in the art would have been motivated to do so to grant user access to the computer in the event of a satisfactory match (McKeeth, column 2, lines 1-30).

Regarding claim 21, Zilberman does not disclose expressly wherein packaging a plurality of next key trajectories in said key. However, McKeeth teaches wherein packaging a plurality of next key trajectories in said key (column 6, lines 10-33).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to package a plurality of next key trajectories in said key. One of ordinary skill in the art would have been motivated to do so to grant user access to the computer in the event of a satisfactory match (McKeeth, column 2, lines 1-30).

Regarding claim 22, Zilberman does not disclose expressly whereby said different next key trajectories are to keys in different files. However, McKeeth teaches whereby said different next key trajectories are to keys in different files (column 6, lines

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10-33). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use next key trajectories to keys in different files. One of ordinary skill in the art would have been motivated to do so to grant user access to the computer in the event of a satisfactory match (McKeeth, column 2, lines 1-30).

Regarding claim 23, Zilberman does not disclose expressly receiving input from a plurality of devices. However, McKeeth teaches wherein at least one transmission comprises input from a plurality of devices (column 3, lines 10-28, column 5, lines 1-67, column 6, lines 1-67). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the input from a plurality of devices to create a user signature. One of ordinary skill in the art would have been motivated to do so to grant user access to the computer in the event of a satisfactory match (McKeeth, column 2, lines 1-30).

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Conclusion

23. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

24. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David G. Cervetti whose telephone number is (571) 272-5861. The examiner can normally be reached on Monday-Friday 7:00 am - 5:00 pm, off on Wednesday.

25. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz R. Sheikh can be reached on (571) 272-3795. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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26. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DGC

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12/1/05